

Air Conditioning & Refrigeration News

The Newspaper of the Industry

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MAY BIGGEST MONTH IN HOUSEHOLD REFRIGERATION HISTORY

IN THIS ISSUE

Customers Agin' It, Too

For some time dealers have been arguing against the number of models in refrigerator, range, and washer lines, and now it seems that even the customers don't like it. At least that was the finding in one survey, reported on pages 10 and 11.

Start At the Top, Go Down

Everybody is talking about "selling up" on refrigerators this year—but a Pennsylvania dealer whose sale price is well above the average "sells down." His trick is revealed on page 6, along with other tested sales ideas.

Afraid To Sell 'Em

Appliance sales are easy to make in the oil boom country around Salem, Ill., but dealers are almost afraid to sell anything. For the week's "believe-it-or-not" story, turn to page 15.

It's Being Done

Many persons think that selling commercial refrigeration equipment today is a kind of catch-as-catch-can, back-alley arrangement, and that planned selling effort is wasted. That may be true in some cases, but a number of dealers around the country do it in big-league style, and Capitol Store Fixture Co. of Albany, N. Y. is one of them. Its story of planned success is told on page 8.

Something New

Both in sales and service work, low-temperature equipment for the food retailer (including counter freezers, ice cream, and frosted foods cabinets), is assuming increased importance. A new series of articles, starting in this issue, will examine some of the technical and service problems involved with such equipment. Page 20.

It's Technique That Counts

Much of the present-day advance in the application of air conditioning is in the technique with which an installation is made. The attention that is being given to the detail of installation is told in the description of a recent job published on page 19.

Examining the 'Frigid-Eye'

Some time ago the News published a story about the "Frigid-Eye" service analyzer developed by S. A. Hemmerly of Scranton, Pa. Requests for further information about this device have come from all over the world, so we give more details (with pictures) of its operation. Page 17. Also on the technical side is the concluding instalment of the series on "Control Methods For Flooded Evaporators." Page 16.

Walk-In Into 'Look-In'

How to make a walk-in cooler a "look-in" cooler is told with words and pictures on page 18.

Danger Signals

Is the commercial refrigeration industry "fixing" to repeat some of the mistakes made in the household refrigeration business a few years ago? The editorial, "An Example To Ponder," examines the parallel and hoists the danger signals on page 12.

Specifying a Range

A couple of issues back we published a guide to refrigerator specifications for architects and builders, drawn up by Frigidaire engineers. A similar group of specifications for ranges will be found on page 22.

For the Jobber

News and sales suggestions for refrigeration supply jobbers will be found on page 14.

Three-Base Hits Will Give Poor Kids Vacations

NEW YORK CITY—If the members of New York's three major league baseball clubs suddenly break out in a rash of three-baggers during the period between July 15 and Aug. 31, here's the reason—

The Giants, the Yankees, and the Brooklyn Dodgers will just be doing their part to give under-privileged children a two-weeks' vacation in the country, as guests of manufacturers and distributors participating in Consolidated Edison's "Triple-Hit" refrigerator campaign.

Through an arrangement between the campaign participants and the Children's Welfare Federation of New York, Inc., each "triple-hit" (three-base knock) made by a player on any of these teams will make possible vacations for 10 under-privileged children of the New York area, five boys and five girls.

Letters signed by E. F. Jeffe, Consolidated Edison vice president, have been sent to Horace Stoneham of the Giants, Ed Barrow of the Yanks, and Larry McPhail of the Dodgers, informing them of the arrangement.

Represented in the "Triple-Hit" campaign are Crosley, Frigidaire, General Electric, Gibson, Hotpoint, Kelvinator, Leonard, Norge, Philco, Servel Electrolux, Stewart-Warner, and Westinghouse.

Kelvinator For Farm Has Special Features

DETROIT—A specially equipped 8-cu. ft. refrigerator designed specifically for use in farm homes has been added to Kelvinator's 1940 series.

Arranged to provide flexibility enough to hold large articles, such as a 5-gallon milk can and a tub containing 20 dozen eggs, the new model has five half-length shelves, any or all of which can be removed. It has a metal-reinforced rubber mat to protect the floor of the food compartment when milk cans or other heavy containers are stored.

The model also has interior light, a crisper, and a vegetable bin as standard features. Interior of the refrigerator is finished in porcelain, with the bottom acid-resisting. Shelves are heavily tinned, and there are 16.3 sq. ft. of shelf area with all shelves in place. Ice capacity is 96 cubes, or 12 lbs. at a freezing.

San Diego Household Sales Soar As Bureau Fits Promotions To Times

SAN DIEGO, Calif.—The fact that electric household refrigerator sales hit a new all-time high in San Diego during the first five months of 1940 was no accident. Behind this record lay one of the most intensive advertising and promotional campaigns ever staged by the Bureau of Radio & Electrical Appliances of San Diego County, under the direction of J. Clark Chamberlain.

Recognizing the early season sales possibilities created by the new low prices introduced in January, the bureau launched a "Twice the Value at Half the Cost" campaign early in March.

Window banners and outdoor posters sponsored by National Electrical Manufacturers Association were used as a starter, and served as a core around which the rest of the program was built.

Six 75-inch newspaper advertisements echoed the campaign theme, while window cards and street car

cards (150 of each) bore the same copy as the 15 outdoor posters. A twice-weekly radio program rounded out this promotion.

Outdoor boards, window cards, and dealer set-ups were continued through April. About the middle of the month, advertising began for the fourth annual Spring Fair scheduled for April 30 to May 5. This advertising featured not only refrigerators but also other electrical appliances.

The Spring Fair itself helped materially in speeding up refrigerator sales. All 15 brands actively represented in this area were displayed at this six-day show. More than 70,000 persons attended.

On May 10 another strong series of newspaper advertisements, consisting of three 75-inch advertisements in each of the two local dailies, was launched. Theme of these advertisements was "It's hard to pick a winner when they're all good." Copy (Concluded on Page 2, Column 4)

Apartment House Tries Hand-Me-Down Appliance Idea

ORLANDO, Fla.—To place sales of major appliances to owners of high class apartment hotels on a continuing basis, G. N. Dodge, Inc., General Electric dealer here, has worked out a plan under which the management of these enterprises installs some new equipment each year in its top-flight units.

The year-old appliances in these units are then shifted to somewhat less classy quarters to replace older equipment which, in turn, is relegated to the least expensive apartments.

This is just one phase of the Dodge company's many-sided promotional and merchandising set-up.

Keeping close check on all new construction and remodeling activities also has proven profitable for this firm. Replacement of out-moded equipment has seemed particularly appealing to operators of tourist parks and fishing camps. Many multiple-unit sales to hotels, restaurants, night clubs, and similar establishments have been closed as a result of contacting those owners whose businesses seem to be expanding.

Dodge salesmen are required to know not only their products but (Concluded on Page 24, Column 2)

Clement Will Direct Crosley Engineering

CINCINNATI—Lewis M. Clement has been appointed manager of the engineering division of Crosley Corp., effective July 1. He will have complete charge of engineering and research on Crosley radios, refrigerators, ranges, washers, Koldrink bottle beverage coolers, the Crosley automobile, and other products.

Before coming to Crosley, Mr. Clement was chief engineer for the Radio Corp. of America, of which he was vice president in charge of research and engineering. He has held important positions with Westinghouse Electric & Mfg. Co., International Telephone & Telegraph Co. and associated companies, Western Electric Co., Kolster Radio, Inc., F. A. D. Andrea, Inc., and The American Marconi Co.

\$10 Price Step-Up Plan on Used Refrigerators Brings Illinois Dealer 25% Sales Gain

ALTON, Ill.—Taking a cue from the "step-up" selling plan being stressed this year on new electric refrigerators, the Alton Refrigeration Co., Frigidaire dealer, has worked out a \$10 "step-up" arrangement in its used appliances depart-

Shipments Of 399,000 Units Set New Mark

5-Month Total Exceeds 1½ Million; 'Sixes' Continue Pace

DETROIT—All records for shipments of household electric refrigerators during a single month were shattered during May, when approximately 399,000 units were shipped by manufacturers to distributors and dealers throughout the world, according to estimates by AIR CONDITIONING & REFRIGERATION NEWS.

The May mark is 19,000 units higher than the previous high monthly record, 380,000, established in March, 1937, and 40,000 units above the former peak of 359,000 units for May, also established in 1937.

Marking the third consecutive month this year in which world refrigerator shipments have exceeded the 300,000-unit mark, the May record sent the total for the first five months of the year to approximately 1,583,000 units, a good 40,000 higher than at the same time of 1937, the industry's previous high sales year.

It now appears almost certain that, unless a drastic slump intervenes, sales for the year will easily reach the 2,225,000-unit mark, with an even chance of their equalling or surpassing the record of 2,600,000 units established during 1937, "the big year" in the industry's books up to now.

May world shipments by the 14 manufacturers reporting sales to National Electrical Manufacturers Association (Nema) totaled 379,675 units to set a new record for the month. Previous high mark was 353,557 units, shipped in March of (Concluded on Page 24, Column 2)

How To Get the Undivided Attention of Dealers



Miss Crosley Glamor-Tone, in private life Audree Warner of Cincinnati, steps out of her red and white striped Crosley automobile to present the 1941 radio line to Steinberg's one of Cincinnati's leading appliance stores. Crosley Distributing Corp. of Cincinnati is using this "personalized" means of introducing the new radios to its dealers, and giving them sales and display suggestions.

Sound merchandising strategy applied to the annoying problem of trade-ins was tried here—and worked. Recommended reading for all dealers.

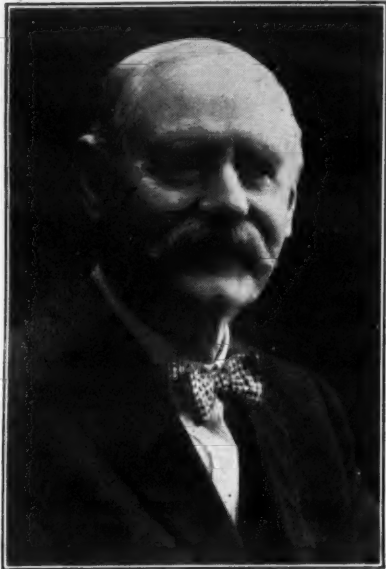
the brackets, depending upon their age and operating condition.

O. K. Hope, manager of the firm, reports several advantages in this type of used appliance merchandising. In the first place, he says, used refrigerator prospects, trained by consistent advertising to the step-up price arrangement, determine in advance the price they want to pay—and most sales are for cash.

Then, too, the \$10 gradation makes it comparatively easy to increase the unit of sale, so that the \$59.45 units move just as fast as do the lower priced models. About 40 refrigerator models usually are on the "salon" floor, giving the prospect a wide choice in every price range.

Dealers who pass up used-appliance business eventually will miss out on new-appliance sales, Mr. Hope believes. His organization pushes trade-in units just as hard as new models—and gets action on both "fronts," with double profit.

Pioneer Passes



J. L. BAKER

J. L. Baker Is Dead; Founded Baker Co.

OMAHA, Neb.—Joseph L. Baker, a founder of Baker Ice Machine Co. and the United States Gypsum Co., died here June 27 after a brief illness. He was 85 years old.

Born in Massachusetts, Mr. Baker was educated there and in Rhode Island, coming to Nebraska in 1879 and settling in Scribner, where at various times he owned lumber yards, grain elevators, agricultural implement houses, a furniture company, and a harness factory.

Discovering that gypsum rock could be used in plaster to make a hard and waterproof finish, Mr. Baker and two associates in 1888 bought a gypsum mountain in Blue Rapids, Kan., and later other gypsum properties. He was on the original executive committee of the United States Gypsum Co., which later was sold to the National Gypsum Co.

The Baker Ice Machine Co., which he started with a partner in 1905 and acquired as sole owner in 1907, began in a small shop in a one-story building at Thirteenth and Howard Sts. in Omaha. Mechanical refrigeration became Mr. Baker's major interest, and most of his time and effort were devoted to working out new ideas and developing foreign markets for the equipment.

He retired in 1932 as president of the firm, and was succeeded by his son, Richard L. Baker. Another son, Chester A. Baker, New York City, is vice president.

He was a member of the Omaha chamber of commerce, and some years ago was active in promotion of waterways development. He also was a former member of the board of directors of Refrigerating Machinery Association, Nebraska Manufacturers' Association, Universal Gypsum & Lime Co., and the Middle West Foreign Trade Association.

Minneapolis Dealer In New Store After Fire

MINNEAPOLIS — Minneapolis House Furnishing Co., Westinghouse dealer, has opened a new store at 802 Hennepin Ave. Former store of the company, located at 22-26 South Fifth St., was destroyed by fire.

New 'Stratoliner' Uses Air Pressure Control To Condition Cabin

DETROIT—"Air conditioning" is used to equalize atmospheric pressures in the fuselage of the Stratoliners, giant four-motor passenger planes which fly above the weather. Engineers for Nash division, Nash-Kelvinator Corp., point out that the principle involved in supplying air to the new Transcontinental & Western Air planes is similar to that used in the "Weather Eye" system found in Nash cars.

The new Stratoliners fly at altitudes of from 14,000 to 20,000 feet, far above the regular airplanes and on top of disagreeable surface weather conditions. The entire fuselage, from the nose of the airplane to the pressure bulkhead aft the galley, is constructed as an airtight cylinder.

Fresh air is drawn in through the leading edge of the wing, compressed by two engine driven superchargers, heated when necessary, and circulated throughout the plane. Spent air is discharged through an exhaust.

With this system, controlled cabin pressure is possible, simulating pressures encountered when the new Boeing is flying at about 8,000 feet. This arrangement offsets the discomfort of pressure changes.

In the new Nash cars, fresh air is drawn through the open cowl ventilator, as the Stratoliner does through openings in its wings. This air passes through a unit which increases its heat to the desired temperature.

Flexibility and Setup For Fast Action Makes San Diego Promotion Click Under Any Conditions

(Concluded from Page 1, Column 4)
stressed the need for larger sizes, in an effort to relieve some of the pressure on the "specials."

Street car cards also were continued throughout May, but copy was changed.

Under the original plans, no further promotional effort had been scheduled until about July 1. But late in May a slump set in. The local market developed a bad case of "jitters."

To offset this reaction to international unrest and the resultant turmoil revolving about national defense preparations (San Diego, a Navy base, is always strongly affected by anything involving the Navy), the bureau changed its plans and got under way early in June with a "Nice Going, America" series of advertisements calling attention to the record refrigerator sales volume piled up during the first part of the year.

To further strengthen its counter-attack against the June doldrums, the bureau later in the month published and distributed to dealers a recipe book of frozen or chilled

dishes called "Under 50° Fancies." This booklet has served admirably as a door-opener on cold canvass calls and as a convincing argument with floor prospects.

The present series of newspaper advertisements is scheduled to continue throughout July. Street car cards, with copy changed to call attention to the new recipe book, also will be continued.

Because of bureau sponsorship of this street car space, the Railway Advertising Co. has been able to sell flanking space to eight dealers and distributors for promotion of the individual brands which they handle.

While placing considerable stress on this refrigerator promotion, the bureau has not been neglecting the interests of other appliances. For concurrent with this refrigerator drive there have been spring campaigns on laundry equipment, radios, and table appliances. In May a spring and summer radio log was issued for distribution to dealers. Indicative of this booklet's popularity is the fact that more than 20,000 of them had been picked up from dealer stores by the end of June.

Sam's Selling Slants



V. E. ("Sam") Vining, merchandising manager for Proctor Electric Co., is the industry's most colorful salesman. This is the sixth of a series of Sam's famous "Selling Slants" messages to salesmen. An earlier series was published in the News in 1937, and later was published as a pocket-sized book.

COLLAR BUTTONS

I went into a Drug Store in Los Angeles and left nine rolls of films to be developed. I took one roll from the camera as I stood talking with the clerk.

The store was connected with one of the well-known downtown hotels, catering to tourists. It was centrally located, beautifully appointed—a store to be proud of. But the clerk who waited on me lacked brains enough to ask me to buy some films. And I didn't buy 'em.

I went into a store in San Francisco to buy shoes. When the clerk took off my shoe we both had a laugh over a hole in my sock. He sold me the shoes I came in for—but he didn't even mention socks which I obviously needed—even when I leaned against the hosiery display case while he gave me my change.

I bought 'em at a store down the street.

I went into one of the best-known department stores in Chicago and three different sales people directed me to three different floors for a department I never did find.

I went into a store in Evansville, Indiana, to buy a shirt—and with it the clerk sold me a collar button.

I had been wanting an extra button for years, but didn't realize it until he suggested the idea.

He created business—

And added untold serenity to my family life.

NOW IS YOUR CHANCE TO STEP-UP

Your Income with this Profit-Maker



A-S-E Froz-n-Food UNIT Lockers present a big profit opportunity in the fast-growing frozen food locker plant industry. A-S-E UNIT Lockers are setting the pace for every refrigerated locker requirement. Their customer-convincing features and improved construction are high points with locker plant operators everywhere.

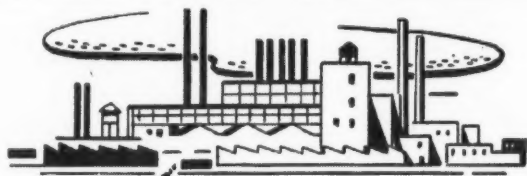
You can sell A-S-E UNIT Lockers for immediate food-locker plant needs—make additional profits on repeat orders. Easy to assemble and install. A-S-E UNIT Lockers require no unprofitable servicing.

Don't overlook this sensational sales opportunity—write us today for full information. There is no obligation.

SOLD ONLY THROUGH DEALERS

ALL-STEEL-EQUIP COMPANY

Incorporated
107 KENSINGTON AVE. AURORA, ILLINOIS



AMERICA'S GREATEST INDUSTRIES INSIST ON AMERICA'S GREATEST RUST PROOFING PROCESS

Bonderizing

In addition to outstanding beauty and mechanical perfection many of America's finest products carry the world's best protection against rust and finish failure.

With Bonderizing under lustrous lacquer or enamel, the finish is given long life resistance to inside humidity or outside weathering.

Bonderizing provides positive adhesion for the finish and effectively bars the penetration of moisture to the metal—rust is avoided and fine appearance is maintained.

Being used on practically all American cars, Bonderizing has spread to other industries and has become the No. 1 form of protection for scores of other products made of iron, steel or zinc.

PARKER RUST PROOF COMPANY
2197 E. Milwaukee Ave. • Detroit, Michigan



THE MARK OF A
BETTER PRODUCT

The Bonderite Label is finding its way into many industries. On Automobiles, Refrigerators, Washing Machines, electrical and architectural equipment, as well as many other products, it indicates a better finish and careful manufacturing in every detail.



Send for These Books

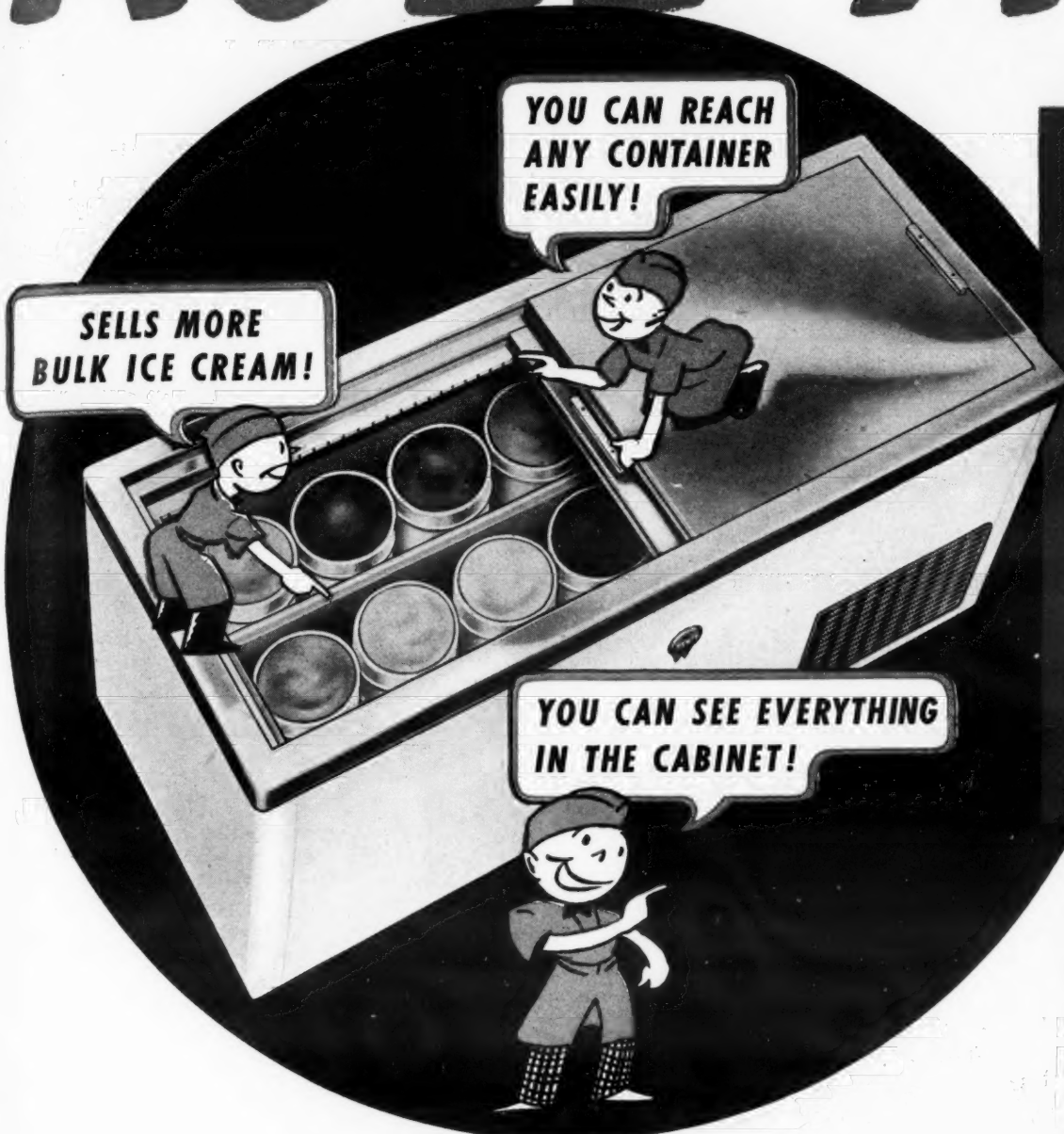
New Books describing recent improvements in Parker Processes are available to manufacturing executives. Send for your copies.



ROLL-A-DOOR

INVESTIGATE the Sweetest Profit Story Ever Told

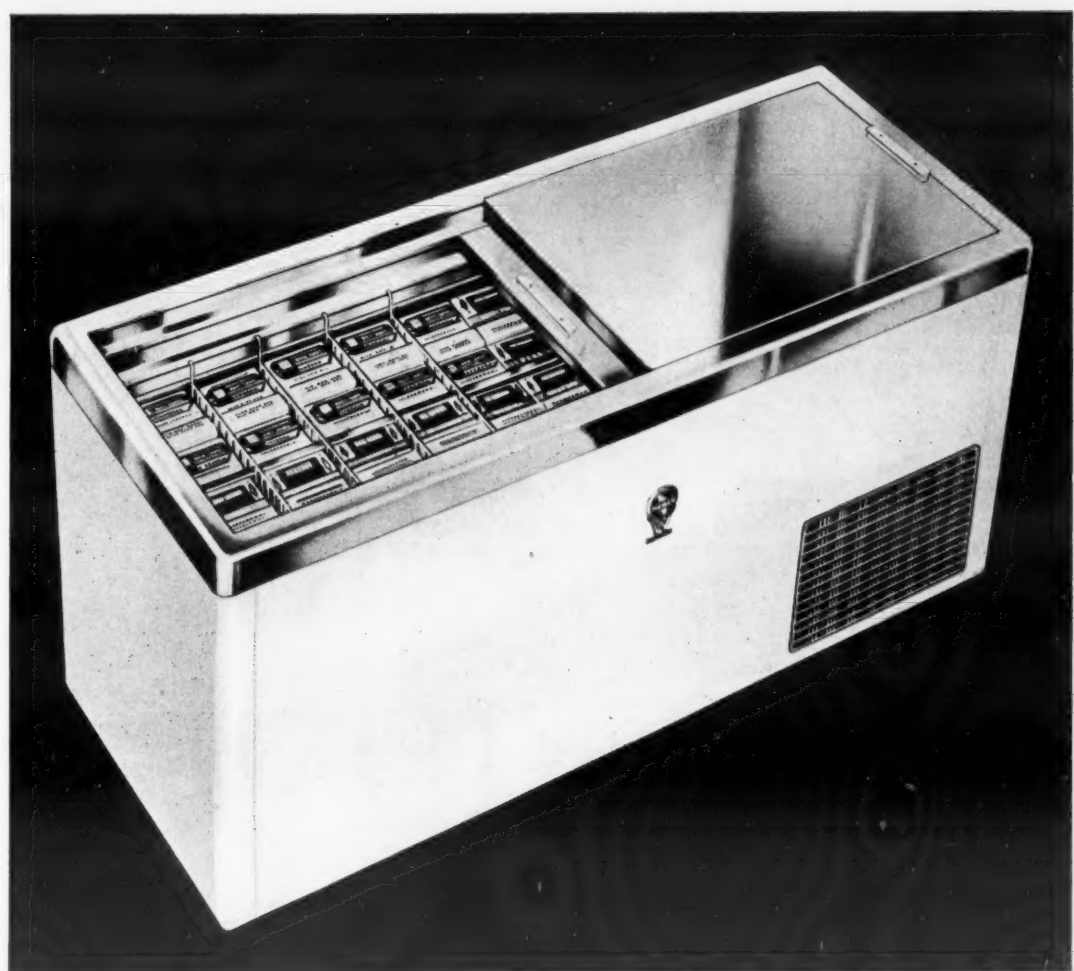
PATENT APPLIED FOR



the Sensational New

ROLL-A-DOOR CABINETS

MAKE *REAL MONEY* FOR
YOU AND YOUR CUSTOMERS



MORE VISIBILITY • EASIER ACCESSIBILITY • ALL STEEL CONSTRUCTION

HERE'S WHY *Progressive* DEALERS EVERYWHERE FEATURE **ROLL-A-DOOR**

ROLL-A-DOOR is years ahead of any other ice cream or frosted food cabinet on the market today! ROLL-A-DOOR is way out in front in sales and way out in front in profits. That's why progressive dealers everywhere are selling ROLL-A-DOOR Cabinets.

WEBER is now offering you an opportunity to cash in on THE SWEETEST PROFIT STORY EVER TOLD, by securing the ROLL-A-DOOR Sales Franchise in your territory.

Never before has any cabinet received such fine public acceptance... Never before has there been such a cabinet as ROLL-A-DOOR.

ROLL-A-DOOR IS NEW...It has created a sensation in the ice cream and frosted food industry...ROLL-A-DOOR IS REVOLUTIONARY...It offers a radical departure from the heavy, clumsy, flip-flop, lift-off lids of the old conventional type cabinets. In their place, ROLL-A-DOOR provides noiseless rolling doors that open half the cabinet to immediate view, thereby providing greater accessibility and more visibility...ROLL-A-DOOR REALLY WORKS...Installation after installation definitely prove that ROLL-A-DOOR immediately increases sales and profits. Can you afford to pass up this opportunity? Plan right now to SELL ROLL-A-DOOR CABINETS INSTEAD OF SELLING AGAINST THEM.



WEBER

SHOWCASE & FIXTURE CO., INC.
5700 AVALON BOULEVARD...LOS ANGELES, CALIFORNIA

Get the Facts Today! You don't need to take our word for it. We'll give you names of dealers throughout the United States who are building their business around ROLL-A-DOOR.

WRITE—WIRE OR TELEPHONE
FOR COMPLETE DEALER SALES
FRANCHISE INFORMATION!

Weber Showcase & Fixture Co., Inc.
Los Angeles, California

Gentlemen:
Send me full information on your sales franchise for
ROLL-A-DOOR CABINETS.

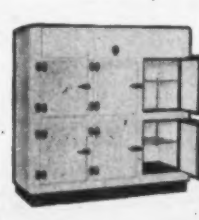
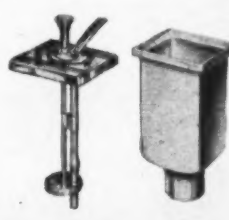
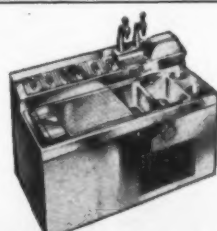
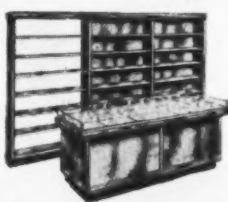
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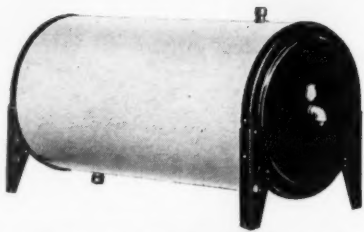
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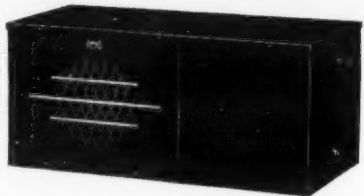
Some of the other Products of our Organization



A Complete LINE of TANK COOLING UNITS



INSULATED TANK COOLERS for remote drinking, glass filling, or industrial application. STORAGE CAPACITIES from 1 1/2 to 150 gallons. RECOVERY CAPACITIES from 9 G.P.H. to 1000 G.P.H.



OIL STATION, SELF-CONTAINED, COOLER for remote drinking bubbler. Other cabinet models with glass fillers and bubblers, self-contained and remote types. RECOVERY CAPACITIES from 9 G.P.H. to 32 G.P.H.

COOLER DIVISION

DAY & NIGHT WATER HEATER CO.

2330 E. 8th St., Los Angeles
WAREHOUSE STOCKS IN PRINCIPAL CITIES

STANDARDIZE on "Day & Night" Storage Type WATER COOLERS and build your reputation for uniform quality on every job . . . whether it be water, beer or beverage cooling . . . air conditioning . . . or specific industrial applications requiring the use of chilled liquids where accurate, constant temperatures must be maintained.

Pictured here are but two of the many different types and models of "Day & Night" Water Coolers. Write today for the complete catalog containing specifications, installation diagrams and other useful information.

Walter Meyer Heads San Antonio Dealers

SAN ANTONIO, Tex. — Walter Meyer, merchandising manager, San Antonio Music Co., was elected president of the San Antonio Radio and Refrigeration Trades Association at the annual election of officers held here this week. He succeeds Joe W. Thiele, Straus-Frank Co.

Elected to serve with Mr. Meyer were: Ed Gauthier, San Antonio Public Service Co., re-elected, and Lester V. Hill, Toudouze Furniture Co., secretary-treasurer. Inauguration of these new officers will take place at the next meeting, July 8.

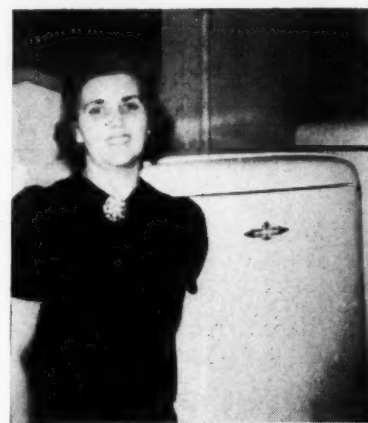
Plans were discussed for increasing the membership of the organization, and for a pre-planned program with a speaker at each meeting instead of once a month as heretofore.

This association is one of the oldest organizations of its kind in the country.

Janesville, Wis. Residents Pay To Become Prospects

JANESVILLE, Wis. — Several thousand persons paid 25 cents each to view the Home Show here May 29 to June 3 in a mammoth tent. Appliance exhibitors included Harris Stores, McVicar Plumbing & Heating Co., L. C. Lenz, Krueger's, Douglas Hardware Co., Adams Appliance Co., Wisconsin Power & Light Co., and the Wisconsin Electric Sales Co.

Calling All Firemen!



Mrs. W. R. Morgan is helping her dealer-fireman husband to success in a drive for refrigerator sales among his fellow fire-laddies.

Gets 'Hot' Leads From State Fire Meeting

NANTICOKE, Pa. — Speaking of "hot" sales ideas—The Electric Shop, Frigidaire dealer here, called out the local fire department—to sell them refrigerators. The drive on the fire laddies coincided with a six-county volunteer firemen's convention, and while the hook and ladder companies were whooping it up with parades and speeches, W. R. Morgan, owner of The Electric Shop, was beating his own drum for refrigerator sales.

Mr. Morgan has been pushing refrigerators to the local firemen for some time. He is himself a member of one of the local volunteer companies. He has sold nearly all of the fire truck drivers new refrigerators, along with other members of the hose and axe divisions. He even installed a refrigerator in one of the fire houses.

So when the convention came to town, he decided to make a play for some of the "visiting firemen." First sale he made was a refrigerator to be chanced off at the convention. This, he reasoned, was a good way to put refrigerators right before his public. Firemen everywhere—prospects made to order.

As a follow-up, a direct-mail campaign to firemen was launched. With a considerable number of users among the 300 local volunteers, Mr. Morgan is making personal contact for sales. Firemen-users make excellent boosters, so he is getting plenty of verbal aid from his fellow fire fighters. Assisting him in the drive is Mrs. Morgan, who is doing her part in making this drive a six-alarm campaign.

Street Parade Features St. Louis 'G-E Week'

ST. LOUIS—All General Electric appliance outlets in the city collaborated in the recent "General Electric Week" sales drive staged here.

Every dealer was represented in some way by advertising in metropolitan or neighborhood newspapers, a total of 10,000 lines of advertising being used during the week.

James Co., G-E distributor in St. Louis, sponsored a total of 100 three-minute spot announcements over two leading local radio stations. Two smaller stations, one giving its announcements entirely in Polish, also were used. This company also supplied 1,000 yellow window banners to dealers in its territory.

Department stores trimmed special windows, conducted store-wide sales drives, distributed G-E buttons among their salespeople.

Some dealers employed a circus atmosphere to attract attention. One store remained open to midnight following a special invitational mailing campaign. Another staged a parade through the city's residential districts with flat-body trucks bearing the various G-E models and a brass band.

Fire Destroys Warehouse Of Baltimore Dealer

BALTIMORE—Warehouse of the Four Besche Bros., refrigeration, major appliance, and furniture dealer here, was destroyed by fire recently. The company's retail store, located in the front of the warehouse, was badly damaged by smoke and water.

3,637 Sales Put Houston Drive Over the Top

HOUSTON, Tex. — Over the top of the 2,500 quota set for the six-weeks' electric refrigerator campaign sponsored by Houston Lighting & Power Co., appliance salesmen here counted up 3,637 units sold during the contest. Over-selling the quota by 45% brought a dollar volume to dealers of \$545,500 and paid more than \$50,000 in commissions to salesmen, it was reported.

Sparking the contest was the offer of \$1,000 in prizes to salesmen. The prizes were awarded from a huge punchboard, salesmen getting punches good for cash for sales made during the contest. It was necessary to enlarge the board due to the sales activity, and \$220 in additional prizes were awarded.

At the close of the campaign a dinner dance for salesmen, dealers, and their wives was held at the San Jacinto Inn with the Houston Lighting & Power Co. as host. At the dinner, the 12 leading salesmen were awarded the top prizes.

The sales leaders, who received amounts ranging from \$25 to \$50, were: W. A. Beard, E. D. Killebrew, M. A. Stern, M. P. Cleboski, C. L. Noack, P. Drago, H. L. Bayne, W. Roberts, Dorothy Oldham, J. Copple, G. H. Anderson, and W. W. Merrifield.

'Sweepstakes' Champs Crowned By Hotpoint

CHICAGO—Top honors, as "Grand Champions," in the Hotpoint Sweepstakes campaign, a drive to promote full-line merchandising of Hotpoint appliances, went to those distributors and distributor salesmen who did the best-balanced over-all sales job on all five Hotpoint appliances during the campaign.

Elliott-Lewis Electric Co., Philadelphia, emerged from the drive as top distributor. Second place was won by Interstate Electric Co., Shreveport, La., and third place by Graybar Electric Co., Detroit.

Homer Siegfried of Graybar's Portland, Ore. branch topped the individual salesmen. Al Harris, Simon Distributing Co., Washington, D. C., and L. Kearns, Graybar Electric Co., Detroit, placed second and third, respectively.

Winning distributors and salesmen will receive both commemorative plaques and prize bonuses.

Throughout the campaign, each unit sale of any Hotpoint appliance entitled the distributor salesman to one additional "Sweepstakes Ticket" which was deposited in the sealed Sweepstakes barrel—an 80-gallon Hotpoint water heater shell.

The barrel was opened at a special Sweepstakes luncheon, and names of 10 salesmen were drawn. Each of these 10 men received a \$75 award and was qualified to participate in the special prize fund set up by Hotpoint's President A. D. Byler.

On June 15, the running of the LaSalle Handicap at Lincoln Fields, Ill., brought the Hotpoint Sweepstakes campaign to a close. The winner was held by L. E. Walton of General Electric Supply Corp., Pittsburgh, who received \$1,000 of the special prize fund. C. L. Finley, Graybar Electric Co., Wichita, Kan., was second and received \$500. Grand champion salesman Homer Siegfried was third, receiving \$250.

Brooklyn Appliance Men Plan Annual Picnic

BROOKLYN—Second annual picnic of the Electrical Appliance Dealers Association of Brooklyn, Inc. is slated to be held July 28 at Heckscher State park, East Islip, L. I.

Featured event of the affair will be a softball contest with the dealers opposing the combined forces of the manufacturers and distributors.

Practically unlimited quantities of ice cream and soft drinks will be available, reports Sam Klein, chairman of the outing.

Moves In Minneapolis

MINNEAPOLIS—Berry-Chase Co., Westinghouse dealer, has moved into new quarters at 1204 Harmon Place.



THE FINISH

of the Intercollegiate Hundred Yard Dash

IS a triumph to the winner which endures through after life

SYNTEX WHITE SYNTHETIC ENAMEL

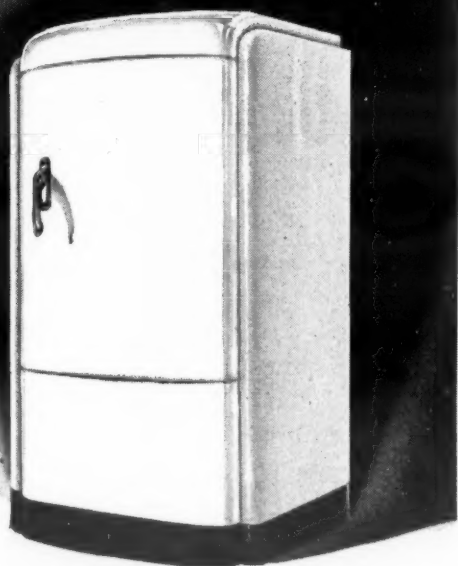
is a finish which endures as a daily source of satisfaction to the refrigerator owner.

There are more than 1,750,000 satisfied housewives who join in unstinted praise of Jones-Dabney Syntex White as a refrigerator finish which is a constant reminder of the beauty and durability which it brings to the product.

In many large industrial operations Syntex is the standard finish. In others it is the safe alternate.

JONES-DABNEY CO. INCORPORATED

SCIENTIFICALLY CONTROLLED INDUSTRIAL FINISHES
Factories at Detroit, Mich., Louisville, Ky., Malden, Mass.



Boeddener New Manager Of Warm Air Group

COLUMBUS, Ohio—Allen W. Williams is retiring from his position as managing director of the National Warm Air Heating & Air Conditioning Association, after serving the organization for the past 27 years. He is succeeded by George Boeddener, who has been assistant to the president.

Since the association was organized in 1914 it has grown into a nationwide trade group with more than 400 members, representing 85% of the national production of warm air furnaces.

Mr. Williams will continue in an advisory capacity and as secretary and treasurer of the National Warm Air Register Manufacturers Institute.

Trane 'Trade-Off' Plan Cuts Seasonal Layoffs

MILWAUKEE — An "employee trade-off" arrangement between the Trane Co., La Crosse, Wis. manufacturer of air conditioning equipment, and another La Crosse industrial concern was one of the interesting labor practices brought to light at the job stabilization conference held recently at the Pfister hotel here and participated in by approximately 1,000 Wisconsin employers.

As explained by R. N. Trane, president of the Trane Co., this plan provides for an exchange of employees between the two firms, which have different slack and peak periods.

"When they are busiest and need extra men," Mr. Trane told the conference, "we are in our slack season, so they simply hire workmen which we might otherwise have to lay off. Then when our peak season comes, and our personnel needs become greater than usual, we not only get our own men back but also hire some of their men as well."

"This policy," declared Mr. Trane, "has enabled us to keep our workers employed more nearly on a year-around basis, and to largely eliminate seasonal layoffs. As a result, the unemployment compensation which we will have to pay this year will be about one fifth of that which we paid out last year."

Other employers attending the conference testified that unemployment reserve contributions in many cases have been cut to zero, seasonal layoffs have been reduced from as much as 94 to 1%, labor turnover has been cut from 23 to 13%, and employees' annual income has been increased 25%.

C. A. Raasch of H. C. Prange Co., Sheboygan department store, and Miss Gertrude Sykes, personnel director of Ed. Schuster & Co., Inc., Milwaukee department store, both described how their companies had been able to maintain a fairly constant level of employment by teaching their employees to know and to be able to handle more than one job.

"We apply the same personnel policies to our extra help as to those regularly employed," Miss Sykes said. "Every extra knows in advance what period of work she will have during the year."

Other employers who spoke at the conference were H. T. Burrow, president of Malleable Iron Range Co., Beaver Dam, Wis., and S. H. Slaymaker of Fairbanks, Morse & Co., Beloit, Wis. Both of these executives outlined their successful methods of reducing labor turnover.

Alleges 'Tenderay' Infringes Trademark

CINCINNATI—A complaint charging trademark infringement and unfair competition, and seeking an injunction and damages, has been filed in U. S. District Court against Kroger Grocery & Baking Co. by Perfect Mfg. Co., owner of the trademark "Tendra."

Plaintiff alleges that confusion is caused in the minds of the public by the Kroger company's use of the word "Tenderay," since both Tendra and Tenderay processes are advertised to provide more tender meats.

Tendra Kitchens, a division of Perfect Mfg. Co., applies the trademark Tendra to its process of meat tenderizing by use of the essence of papaya, a tropical fruit rich in vegetable enzymes which are said to act on the tough fibers of the meat.

3,000 Attend Appliance Preview In Boston

BOSTON—More than 3,000 radio, electrical appliance, and furniture dealers from all sections of New England gathered June 27 at the Copley-Plaza hotel to attend a preview of 1940-41 radio and electrical appliance lines.

The show was sponsored by the Radio Wholesalers' Club, Inc., composed of leading Boston distributors.

Officers of the club are: Manny Beckwith, Hub Cycle & Radio Co., Inc., president; T. H. Burke, J. H. Burke Co., vice president; Arthur Marquardt, Collins, Inc., treasurer; and Hollis Vaughan, secretary.

Among the distributors who had exhibits were: Northeastern Radio, Inc.; Wahn Sales Co.; J. H. Burke Co.; Motorola Distributors; General Electric Supply Co.; Hub Cycle & Radio Co.; Gross Sales, Inc.; Milhender-Afes Electrical Supply Co.; Wetmore-Savage Electrical Supply Co.; and Graybar Electric Co., Inc.

Research Indicates Climatic Changes May Affect Expectant Mothers Adversely

SAN FRANCISCO — Expectant mothers may be protected from the severe and occasionally fatal convulsions which sometimes accompany late pregnancy by cooperation between physicians and weather forecasters, two scientists reported here recently. That convulsions, technically known as eclampsia, developed within two days of pronounced weather changes, was shown in a study by Dr. Paul C. Fuerstner, University of California gynecologist and Frederick Sargent, meteorologist of Massachusetts Institute of Technology.

Other reports indicating the effect of weather on physiological reactions have been published from time to time in AIR CONDITIONING & REFRIGERATION NEWS, particularly the work of Dr. Clarence Mills of the University of Cincinnati, whose findings were published last year in a book, "Medical Climatology."

The NEWS also reported the work of University of Illinois scientists who found that grouching and aching teeth often accompanied rapid changes in barometric pressure. These scientists asked air conditioning engineers to develop some method of isolating patients away from violent weather changes.

The more recent report, published in detail in the Journal of Laboratory and Clinical Medicine, said that other researches had established definitely that attacks of apoplexy, laryngeal group, acute glaucoma (an eye disease), and other ailments followed such weather changes.

In the case of eclampsia, nearly two thirds of the cases occurred between 40 and 50 hours after a "cold front" had passed over the locale of the study, in this case Chicago, where meteorological changes develop in quick succession.

A cold front is that portion of a

moving mass of cold air that meets a mass of relatively warmer air and usually causes rain or storms.

Thirteen per cent of the cases followed the passage of a "warm front" over Chicago. A warm front is the dividing line between an advance mass of warm air and a receding mass of cold air. The weather change is more gradual than in the case of the cold front and it usually causes temperatures to rise and pressures to decrease.

The report made no claim that weather shifts caused eclampsia. Its authors said that the cause of eclampsia is not known definitely. The number of cases was decreased, however, since physicians began treating expectant mothers who show early signs of the condition.

"It should be possible," the researchers said, "to work out practical prophylactic (preventative) measures against eclamptic convulsions from weather changes."

"Imminent 'front' passages are known to the official weather bureau early enough to be communicated to pre-natal services."

3 Times As Great!

LEONARD SALES FOR MAY INCREASED SENSATIONALLY OVER MAY, 1939

...and June Sales
Were Even Greater!

HERE'S WHY
LEONARD DEALERS
ARE CASHING IN!

- ① A SOUND PRODUCT
- ② AN UNEXCELLED "STEP-UP" PLAN
- ③ LARGE TERRITORIES WITH OPPORTUNITY FOR BIGGER VOLUME

A RECORD SELLING SEASON FORECAST AS SALES CONTINUE MOMENTUM!

THIS year Leonard dealers were given their greatest opportunity—and they're cashing-in with sales increases that are making old-timers blink and rub their eyes and blink again!

Leonard has given them just those things necessary to do a real selling job... a sound product... a price structure and values that meet all competition... an unexcelled "Step-up" plan that leads buyers naturally and easily to the models that provide real profits... and larger territories that give ample room for development and

bigger volume without destructive competition in their own line.

Sales figures show how they've profited. During the all-important month of May, shipments to Leonard distributors and dealers were *three times* those of May last year, June sales were ahead of May, and the trend is to even higher levels.

Yes, a Leonard franchise pays real dividends because it's planned that way... planned to give you everything you need for successful refrigerator business!

Leonard Division
NASH-KELVINATOR CORP., DETROIT, MICH.

LEONARD ELECTRIC

Servicemen Sell 2,527 Range Surface Units

ATLANTA—Proving that service men make real salesmen when they set out to do a thorough job, appliance repairmen for Georgia Power Co. sold a total of 2,527 electric range replacement units in their Range Unit Modernization Campaign, which ran from Jan. 22 through May 20.

With home service workers providing prospect lists, and a commission of 50 cents for each range replacement unit sold, company divisions racked up the following sales totals during the drive: Atlanta, 687; Macon, 631; Augusta, 407; Columbus, 365; Rome, 228; and Athens, 209.

Council Maps Long-Range Drive On Electric Water Systems

NEW YORK CITY—A wide range three-fold promotional program on electric water systems has been announced by the Electric Water Systems Council.

This program includes distribution of 50,000 copies of a "plan book" to dealers; 300,000 copies of a broadside addressed to prospects; and a semi-technical manual on the selection and installation of various types of pumps. This latter manual will be distributed by manufacturers to their dealers.

The council reports that sales this year are already 10% above sales for the same period of 1939.

Separate Displays Help Store Selling 5 Lines

LOS ANGELES—Each of the five lines of household refrigerators carried by Barker Bros. is displayed in a separate bay of the store's recently remodeled seventh floor appliance department, so that a prospective customer may compare the merits and features of all lines, yet may concentrate on one particular brand when the time comes for a decision to be made.

Each of the bays—there's one for Westinghouse, General Electric, Kelvinator, Frigidaire, and Servel Electrolux—is provided with a table and comfortable chairs so that prospects may "make themselves at home" while they figure out how to get the new refrigerator into their budget or into their kitchen.

The store reports that this individualized method of display has stimulated interest and sales, and has resulted in a far smoother flow of floor traffic.

Hoover vacuum cleaners are displayed in an individual bay next to the row of refrigerator alcoves, and Bendix home laundry units have a separate enclosed display space on the opposite side of the floor. Ranges are still displayed on the open floor.

A kitchen planning bureau is represented in three completely furnished displays, showing ideal kitchen arrangements and ways in which old kitchens can be remodeled and modernized with up-to-date appliances. Fluorescent lighting is used throughout the department.

Deluxe Tourist Court Has Electric Kitchens

CLEAR LAKE, Iowa—Complete kitchen facilities, including a Frigidaire electric refrigerator, a range, sink, and built-in cupboards, are a feature of the new Hilltop Motel, (motor court) one section of which recently was opened here.

The finished wing incorporates nine kitchenette units, while a second wing, now nearing completion, will add six more units to the structure.

Built for year-around operation, the Hilltop Motel, has 3-inch, sound-proof walls and is equipped with heating apparatus, hot and cold running water, and lavatories with shower baths.

May Cleaner Shipments At All-Time Peak

CLEVELAND—Sales of household vacuum cleaners hit a new high in May, establishing an all-time record for the month of 173,896 units, a 52% increase over the May, 1939 total of 114,377, according to industry figures announced by the Vacuum Cleaner Manufacturers' Association.

The month's volume played a large part in piling up the second largest January-May total in the industry's history, sales aggregating 786,775, a gain of 30% over 606,579 units sold in 1939.

Highest mark was established in 1937, when sales reached 835,398.

Sells Down—Sales Up

Turnabout Tactics Push Pennsylvania Dealer's Average Price Well Above 'Special' Class

NANTICOKE, Pa.—Selling his prospects "down" instead of "up" is the turnabout method used by Howard Tremayne, General Electric dealer here, to push his average sales price on refrigerators considerably above the low "special" price.

Up to the middle of June, Mr. Tremayne, owner of The Electric Center, had sold 60 refrigerators. Of these sales, not one was in the lowest-priced bracket, he reports, and few sold under the \$150 class.

Mr. Tremayne's method is to show a prospect one of the highest-priced models in his stock, regardless of how he sizes up the prospect as to the approximate price range that could be sold the quickest and easiest. This method of "leading them down" has resulted in the majority of orders being taken for models a few steps down from the top prices. Not one prospect settled on the "special."

"Selling down" requires just as much persuasive selling effort as "selling up"—if you want to apply the selling brakes before the prospect skids into the "special" class, Mr. Tremayne reports. All the outside selling work is done by Mr. Tremayne, but he depends also on floor traffic. To give his store a more attractive appearance, Mr. Tremayne has recently enlarged the

He Leads 'Em Down



Sixty sales—and none of them "specials"—is the 1940 record of G-E Dealer Howard Tremayne of Nanticoke, Pa., shown here with Mrs. Tremayne.

display floor and added fluorescent lighting fixtures. In the rear of the store is a complete electric kitchen.

To keep prospects and customers coming into the store, a regular program of spot radio advertisements has been instituted, with specials on small appliances as sales "bait."

Dealer Finds Location in 'Park-and-Shop' Block A Boon To Floor Traffic and Sales

KENMORE, N. Y.—The "Park-and-Shop" block here—in which stores are set back far enough from the main thoroughfare to permit two lines of cars to park—has proved a boon to Clyde Southall, local electrical appliance dealer.

Mr. Southall's store is located right in the middle of this block—which is said to be the only one of its kind in the East—and so he benefits from a goodly share of the shopping traffic which the block enjoys. He reports that on a busy day as many as 8,000 cars will make use of the block's parking facilities.

Because of the convenience in parking and the variety of merchandise available in the block's 10 stores, the block serves as a shopping center for people from miles around, including a large following from

rural areas.

Mr. Southall, like all other merchants in the block, has to pay rent for the parking space in front of his store and has to keep this space free of snow in the winter. But nonetheless he considers it a mighty good investment.

Having formerly operated a store in downtown Buffalo, Mr. Southall is able to compare the conventional type of shopping district with the Park-and-Shop idea. Says he:

"This type of block has definite pulling power. I think that after this experiment has proven itself a worthy project there will be many more like it springing up in heavily populated districts. And the electrical appliance dealer will do well to avail himself of any such opportunity."

If You Want To Be Sure That Women Will See Your Appliance Department—

HUNTINGTON PARK, Calif.—Placed adjacent to the women's rest rooms, and arranged in such a way that the appliance display flanks both ends of the heavily trafficked linen and domestics department, the newly opened major appliance display of Wineman's Department Store is calculated to catch most of the women who enter the store.

Two makes of refrigerators are handled by this department, and plans are under way for addition of a third make. C. E. Jeffries, sales manager of the department, has trained specialists for each line of refrigerators. These men are equipped with a general story on all appliances, but offer a detailed sales presentation only on the particular line to which they have been assigned.

To announce the opening of its appliance department, the store ran a 14-column advertisement in the local newspaper. This advertisement made effective use of a recently headlined local news story. Recording the bacterial contamination of softened butter as the cause of poisoning which made 200 male high school teachers ill at a school banquet, the advertisement quoted Dr. George Parrish, Los Angeles city health officer, as declaring:

"The incident should serve as a warning to all persons to keep food such as butter, cold meats, cheese, etc., well refrigerated as a means of preventing contamination."

This advertisement resulted in a large number of inquiries to the appliance department for information on proper refrigeration.

Here's Latest 'Hooker': \$10 Groceries With \$100 Box

APPLETON, Wis.—All sorts of inducements have been offered in all sorts of ways to "on-the-fence" prospects for refrigerator sales, but the local Montgomery-Ward store added a new chapter to this kind of promotional activity when it used a full-page color newspaper advertisement to announce its offer of \$10 worth of groceries with purchase of any refrigerator priced above \$100. The offer was made possible through a tie-up with the Kroger grocery store chain, and extended for only three days. Down payment of \$5 was required, and the advertisement clearly stated that the number of such deals was limited.

'Specials' Can't Reduce Georgia Man's Volume

TRENTON, Ga.—"Specials" can't keep a good salesman's dollar volume down, believes Tom Renfro, local manager for Georgia Power Co. Of the first 15 sales made by Mr. Renfro in the company's "Battle of the Ages" campaign, only one was for the \$114 unit.

Pointing out the convenience features on the higher-priced units, and stressing the small difference in costs on the company's time-payment plan are his only methods of bringing prospects above the "special" class, Mr. Renfro says. It's just as simple as that, he declares—you just tell 'em, and sell 'em.



THAT'S RIGHT, youngster. It shouldn't surprise you that your smart mother insisted upon a DULUX finish when she bought this beautiful new refrigerator to replace the one the family outgrew.

DULUX was on the smaller model. And during the four years that refrigerator was in the kitchen, your mother saw how white it stayed . . . in spite of wear and tear, accidental bumps, food stains, grease spots. She found out how unbelievably easy it is to keep a DULUX finish clean.

So do you wonder that when your mother ordered this big new beauty, she insisted its finish be DULUX?

Because DULUX has every quality women want—most refrigerator manufacturers today are using this whiter, work-saving finish. And because DULUX offers women this recognized extra value, many salesmen have found that it pays to make DULUX an important part of every selling talk.

Feature DULUX in your sales talk. You will find that it can help you sell refrigerators faster. E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.



Visit Du Pont "Wonder World of Chemistry" Exhibits at N. Y. World's Fair and on the Boardwalk at Atlantic City



DULUX

THE MODERN FINISH FOR MODERN LIVING...It saves work

Texas Cities Prove Active Markets For Cooling and Ventilating Units

Beauty Shop Serves As 'Springboard' For Drive

DALLAS, Tex. — Utilizing the neighborhood beauty shop as the focal point of a unit cooler sale campaign, the W. A. Green Co. has made considerable headway in the commercial and residential market, reports Frank B. LaPrelle, department manager.

In planning the campaign, the staff sought some means of entering each neighborhood to approach one prospect likely to prove most helpful in attracting the attention of others. The beauty shop was the choice.

A list of all beauty shops was compiled; then followed an examination of their financial rating. To expedite salesmen's activity, one of the delivery services in Dallas was employed to "route" the list.

After the preliminary mail campaign has been completed the salesman calls on the neighborhood beauty shop. After the sales story has been presented to the owner the salesman works other business places in the neighborhood.

The beauty shop was chosen as a focal point of the campaign, as women of the neighborhood visit the shop, and experience the comfort possible in an air conditioned space. Thus they would become interested in similar equipment for the home, no matter what their husband's occupation.

Mr. LaPrelle reports that the firm has equipped several hotels, barber shops, beauty parlors, cafes, and other small business places, in the face of unfavorable weather conditions. He has also found home owners very much interested in this type of cooling equipment.

In checking reports of sales Mr. LaPrelle found that a number of orders originated from the firm's canvass of neighborhood beauty shops, and now believes that these institutions are a logical "springboard" for a sales drive on unitary conditioning equipment.

Evaporative Cooling Sales Up In April

DALLAS, Tex. — Evaporative coolers topped sales in commercial equipment fields in Dallas in April, according to records of the Dallas Power & Light Co.

There were 32 sales of such equipment, the tabulation shows. Next in order of total sales were refrigerator and display cases at 14 sales, and then water and beverage coolers and ice cream and frozen foods cabinets, at 12 each. There were two sales of air conditioning units and two of air conditioning systems.

Dallas Concern Has Ventilation Line

DALLAS, Tex. — Complete evaporative cooling systems together with a line of ventilating and air conditioning specialties has been announced by the Air-O-Line Co. here. Evaporative cooling units in capacities from 4,000 to 10,000 c.f.m. are described in the company's catalog.

The company also handles small window type evaporative units for home and office use.

Attic Fans Gain 171%

DALLAS, Tex. — Attic fan sales in Dallas for April, 1940 numbered 103, an increase of 171% over sales for the same period in 1939. Installations thus far in 1940 were 208, compared with 115 for the same period in 1939.

Mortuary To Install Air Cooling System

FORT WORTH, Tex. — Chatham Funeral chapel here, has called on Baker Ice Machine Co. for estimates for installation in its funeral chapel of an air conditioning plant. The mortuary will be first in Fort Worth thus to be equipped, it is said.

Two Large Jobs Sold

DALLAS, Tex. — Installation of air conditioning units in Magnolia Petroleum Co. bookkeeping offices and the Hub Clothing Co., has been completed by Carrier-Bock Corp. Installation cost in each instance was \$7,500.

160 Tons In Hotel

FORT WORTH, Tex. — Baker Ice Machine Co. has completed the installation of a 160-ton air conditioning plant in the Scarber hotel here. Ammonia equipment is used to chill water which is circulated to individual units in 132 rooms, the lobby, mezzanine dance floor, dining room, radio room, and the apartment penthouse situated on top of the building.

70° E. T. Found Best Indoor Temperature

NEW YORK CITY — Seventy degrees is the optimum effective temperature for office workers during the months of July, August, and September, according to studies made in Minnesota, Texas, Washington, D. C., and Ontario, Canada, by the committee on research of the American Society of Heating and Ventilating Engineers.

This 70° E. T. optimum comfort may be interpreted to compare with a maintained condition of 74° F. dry bulb and 60% relative humidity or 76° F. dry bulb and 40% relative humidity.

Optimum effective temperature for men was found to be 1.2° E. T. lower than that for women, according to Dr. W. J. McConnell, of the Metropolitan Life Insurance Co., who supervised the investigations.

It is believed that men are more comfortable at a slightly lower temperature because they normally wear heavier clothing than women.

Unit Sales Delayed By War and Weather

GREENVILLE, Ill. — The war and the weather have been the two biggest drawbacks to the sale of air conditioning equipment in this section of the state during the early part of this year, reports Carl Nevinger, head of Nevinger Mfg. Co., maker of Nevco-Aire self-contained equipment.

Because the weather has been unseasonably cool this spring, many merchants who ordinarily would have installed cooling equipment have decided to defer their purchases, at least until the coming of hot weather, Mr. Nevinger says.

Also, the "war scare" has penetrated a good many business men in this part of the country, who now want to "see what's going to happen" before they undertake any additional investment in their enterprises.

Despite these rather discouraging factors, however, the company has made a number of installations in

the central Illinois territory this year, Mr. Nevinger says, and has shipped equipment to dealers in Mississippi, Florida, Minnesota, and Indiana. Nearby installations, handled by the company itself, have included:

Mobley's drug store, Hillsboro, 5-ton unit; Schroeder's Cafe, Collinsville, 5 tons; Evelyn's Beauty Shop, Collinsville, 3 tons; Starnes Cafe, Salem, 3 tons; Hanes Cafe, Salem, 3 tons; Bradford National Bank building, Greenville, 5 tons; office of Coates Steel Products Co., Greenville, 3 tons; Green Lantern Cafe, Effingham, 5 tons; and the reed room of Wicks Pipe Organ Co., Highland, 1½ tons.

Buffalo Newspaper Editorial Quarters Air Conditioned

BUFFALO — Second-floor editorial rooms of the Buffalo Evening News have just been air conditioned to provide more comfortable working conditions for the editorial staff.

First newspaper to be air conditioned in the Buffalo area was the Rochester Times Union building.

WHAT'S THIS? NO WATER JACKET ON THE CYLINDERS?

THAT'S RIGHT!...

YOU CAN DO WITHOUT IT BY
USING FREON* REFRIGERANTS!



HERE'S WHY you do not need an expensive water jacket on cylinders and cylinder heads of your compressors to cool the refrigerant gas . . . when you use "Freon-12" refrigerant! "Freon-12" gas develops low superheat and stays well below carbonization temperature of mineral lubricating oil. Its temperature as a compressed gas through the discharge valve, under standard ton conditions, is only 109.5°F. So, naturally, "Freon-12" does not need water jacket cooling!

What this means to you!

By eliminating water jackets you cut the cost of patterns, castings, foundry labor and scrap, machine work, and assembly. You save by ending the need for water connec-

tions, gaskets and other fittings and equipment for the circulation of water through the cored water passages. In addition, you reduce the cost of installation, maintenance, and service. The use of uncored but finned cylinders and cylinder heads for "Freon-12" charged compressors also reduces the possibility of refrigerant leaks from the system, or of water entering the system through thin wall iron castings.

Uncored cylinders for "Freon-12" compressors operate at low temperatures and pressures. They are small in size, light in weight, simple in construction, efficient in operation! They give you low first and maintenance cost and long years of efficient service. So specify them for your next job.

What else do you get with "Freon"?

► Featured on this page is just one of the outstanding advantages you get when you specify "Freon" refrigerants! There are many others. For instance, "Freon" refrigerants are safe. And this harmlessness makes possible still another advantage: "Freon" refrigerants permit use of the newer, more efficient direct expansion system in place of the old-fashioned indirect system, using brine coils.



FREON

REG. U. S. PAT. OFF.

safe refrigerants

*"Freon" is Kinetic's reg. trade mark for its fluorine refrigerants

KINETIC CHEMICALS, INC., TENTH & MARKET STREETS, WILMINGTON, DELAWARE

'3-Speed' Cooling In New System For Ripening Bananas

BIRMINGHAM, Ala.—Nine carloads of bananas can be ripened at three different speeds, depending on temperature levels, in the new plant of the Alex Kontos Fruit Co. here. Six individual rooms, each capable of holding one and one-half carloads of bananas, are controlled by individual unit coolers of the blower type, located in an insulated housing above the rooms.

Fast, medium, and slow speeds of ripening bananas are possible in this plant. For fast ripening the temperature is held at 72° F. with relative humidity of 90 to 95%. After 24 hours the temperature is reduced to 68° until the fruit is colored, and then reduced to 66° F.

A constant temperature of 64° F. is maintained for medium speed ripening, which takes from five to seven days. Nine to 10 days are required for slow ripening, the temperature being gradually warmed to 62° F.

Special instructions are given for ventilation in each case, particularly since high humidity slows up the ripening process. After the fruit is ripened the storage is usually kept between 56° and 60° F.

In the system design, each unit cooler is controlled by an individual thermostat and a solenoid valve. The fans operate continuously.

Above the door of each room are mounted the solenoid valve, thermostat, and three pilot lights. The first is connected with lights in the room; the second is part of the snap switch which operates the blower; the third burns when the solenoid valve is open.

Below the third light is a five-way selector switch which throws the solenoid valve to hand operation or to the thermostat.

There are three 5-hp. low pressure Frick refrigeration machines used on the job, which are controlled by separate suction pressure switches, and all connected to an evaporative condenser. The installation was made by Wm. T. Smith of Smith & Smith Refrigeration Co.

Dairy Industries Show Lists 250 Exhibits

ATLANTIC CITY, N. J.—This year's Dairy Industries Exposition, to be held here during the week of Oct. 21, already has attracted 250 exhibitors, reports Charles W. Caldwell, secretary. Area of the exposition will equal five football gridirons, end to end.

Additional spaces are still available, at a rate of \$2 a square foot, including booth sign, directory listings, rugs, and furniture.

Louis Menges To Join 'Tenderay' Staff

BLOOMFIELD, N. J.—Louis J. Menges, formerly president of Lou Menges & Associates, St. Louis, has joined the "Tenderay" process licensing division of the Westinghouse lamp division here.

In his new position, Mr. Menges will travel extensively, keeping in close touch with meat packers and dealers who are licensed to use Westinghouse's Tenderay process of tenderizing meats.

Mr. Menges has been associated with the meat packing business, in one capacity or another, for most of his life. He holds a number of patents on packing house equipment. The firm which he formerly headed specialized in design and sales of this type of equipment.

'Specialist' In Beverage Cooler Has New Store

DALLAS, Tex.—Beverage Service Co., dealer for Westinghouse and Mills beverage coolers, has opened a new store at 4501 Worth St. Simon Herzstein is president and L. V. Summitt, sales manager.

Very Close Control of Temperatures Necessary In X-Ray Developer

ATLANTA—An unusual mechanical refrigeration system provides baths and solutions at exact temperatures for positive and delicate processing of "life and death" x-ray film at the Piedmont hospital here.

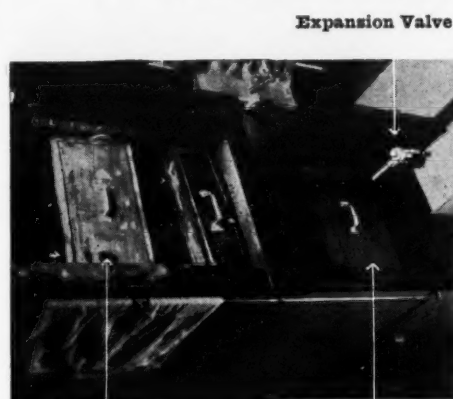
Constant temperature of baths and solutions in x-ray film developing is essential to getting full clear details in the negative.

In the developing tank water baths are changed at the end of each day; the next morning the refilled water is 65° F. and remains at the same unvarying temperature throughout the entire day.

Fedders coils and expansion valves are used in the installation which was made by the commercial refrigeration department of Georgia Power Co.

The installation is considered a model for such developing operations.

Mechanical Refrigeration Fills Another Role In Hospital Work

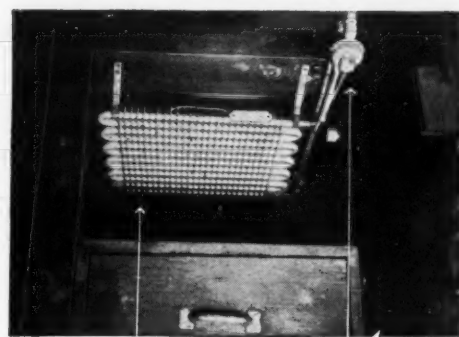


Developing Tank

Expansion Valve

Compact developing and hypo tanks for x-ray film developing that are maintained at exactly 65° F. during all load conditions. Installation in Piedmont hospital, Atlanta, Ga.

Closeup of the Fedders finned coil and automatic expansion valve at one end of the washing tank.



Coil

Expansion Valve

FTC Issues 'Cease & Desist' To Johns-Manville

WASHINGTON, D. C.—Federal Trade Commission has ordered Johns-Manville Corp. to cease and desist from using the terms "entirely mineral," "mineral composition," "mineral—not vegetable," and similar

statements in the distribution of its "Rock Cork" insulating material, which the FTC claims is not entirely mineral in composition.

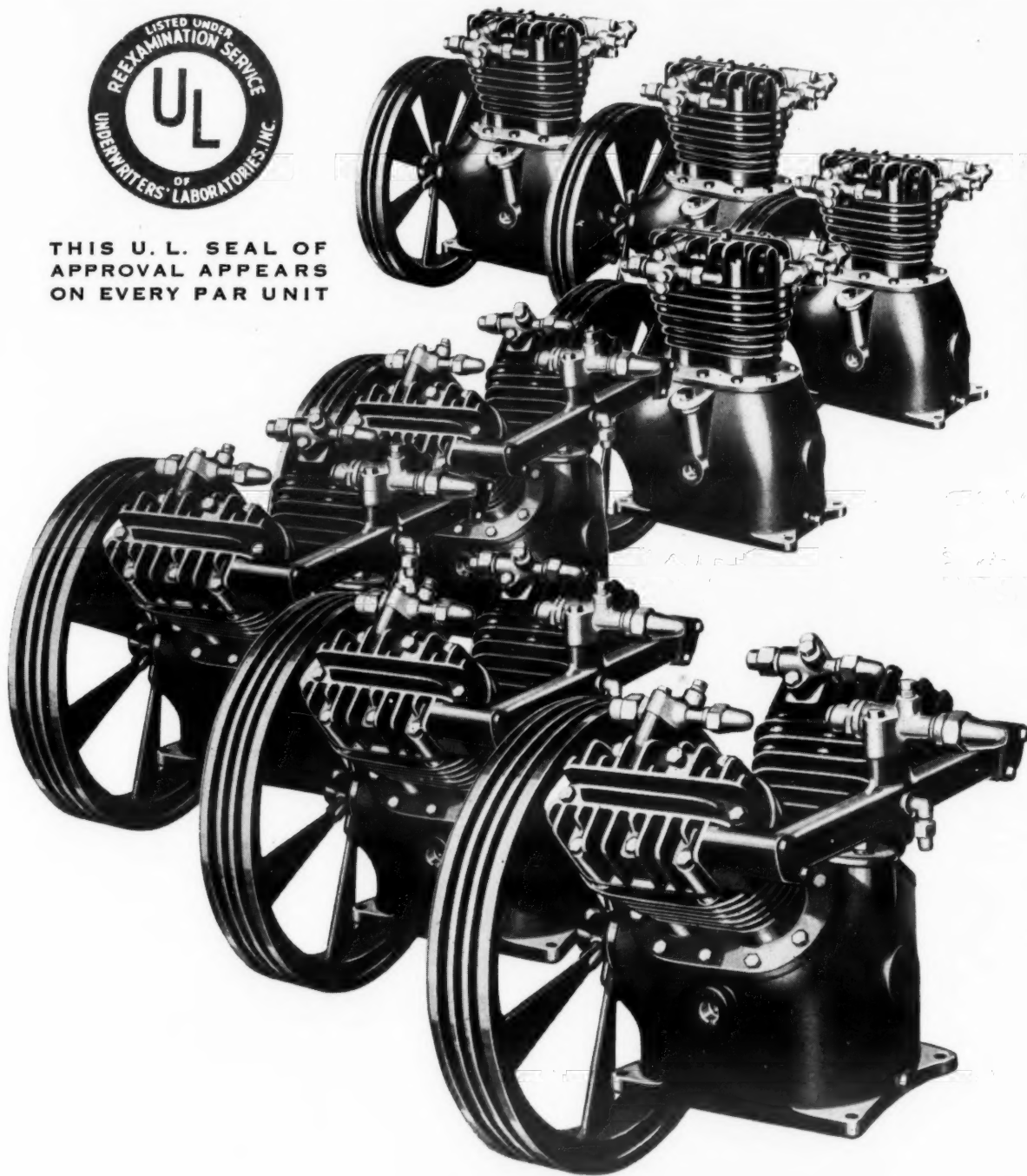
Commission findings were that the product was composed of approximately 88% mineral matter and 12% vegetable matter, and that the vegetable fiber was not the vegetable matter known as cork.

Mitchell Is Full-Line Westinghouse Dealer

BALTIMORE—Lloyd E. Mitchell, Inc., 2315 Cecil Ave., has been appointed distributor for the full line of Westinghouse commercial and domestic air conditioning and domestic heating equipment.



THIS U. L. SEAL OF APPROVAL APPEARS ON EVERY PAR UNIT



PAR

HAS THE RIGHT SIZE!

FOR every job of refrigeration there is one correct size of compressor — one correct size that will insure maximum efficiency. Don't botch up an installation with a compressor that is too big or too little . . . it's not necessary when you use a PAR. 2 and 4 cylinder compressors . . . 8 sizes, 1/5 H.P. to 10 H.P.—the correct size to properly fit any particular application. Buy PAR!

★ ★ A PAR UNIT FOR EVERY JOB ★ ★
SEE YOUR JOBBER

ALABAMA
BIRMINGHAM—REFRIGERATION SUPPLIES DISTRIBUTOR
MONTGOMERY—TEAGUE HARDWARE CO.

ARIZONA
PHOENIX—J. CARL WHITE CO.

CALIFORNIA
FRESNO—ARDELL REFRIGERATION SUPPLIES
LONG BEACH—REFRIGERATION SUPPLIES DISTRIBUTORS

LOS ANGELES—FRANK GILLET COMPANY
LOS ANGELES—REFRIGERATION SUPPLIES DISTRIBUTORS

OAKLAND—CALIFORNIA REFRIGERATOR CO.
SAN FRANCISCO—CALIFORNIA REFRIGERATOR COMPANY

COLORADO
DENVER—MC COMBS REFRIGERATION SUPPLY CO.
DISTRICT OF COLUMBIA

WASHINGTON—MELCHIOR, ARMSTRONG, DESSAU COMPANY

FLORIDA
JACKSONVILLE—BOWEN REFRIGERATION SUPPLIES, INC.
TAMPA—BOWEN REFRIGERATION SUPPLIES, INC.

WEST PALM BEACH—MOTOR PARTS & EQUIPMENT COMPANY, INC.
GEORGIA

ATLANTA—BOWEN REFRIGERATION SUPPLIES, INC.
MACON—LOWE ELECTRIC CO.

ILLINOIS
CHICAGO—H. W. BLYTHE COMPANY
CHICAGO—AUTOMATIC HEATING & COOLING SUPPLY COMPANY

INDIANA
INDIANAPOLIS—F. H. LANGSEKAMP CO.
SOUTH BEND—F. H. LANGSEKAMP CO.

IOWA
CEDAR RAPIDS—DENNIS REFRIGERATION SUPPLY
DAVENPORT—REPUBLIC ELECTRIC COMPANY

DES MOINES—DENNIS REFRIGERATION SUPPLY
SIoux CITY—DENNIS REFRIGERATION SUPPLY

WATERLOO—WINTERBOTTOM SUPPLY CO.
KANSAS

WICHITA—HOWARD SUPPLY COMPANY
KENTUCKY

LEXINGTON—UNITED SERVICE CO., INC.
LOUISVILLE—S. W. H. SUPPLY CO., INC.

MARYLAND
BALTIMORE—MELCHIOR, ARMSTRONG, DESSAU COMPANY

MASSACHUSETTS
BOSTON—MELCHIOR, ARMSTRONG, DESSAU CO.
SPRINGFIELD—MELCHIOR, ARMSTRONG, DESSAU COMPANY

MICHIGAN
FLINT—LIFSEY DISTRIBUTING COMPANY
GRAND RAPIDS—S. F. HARRIS & SON

MINNESOTA
MINNEAPOLIS—REFRIGERATION & INDUSTRIAL SUPPLY CO., INC.

MISSOURI
KANSAS CITY—FORSUMD PUMP & MACHINERY COMPANY
ST. LOUIS—BASS & COPPER SALES COMPANY

NEBRASKA
LINCOLN—WICKHAM SUPPLY COMPANY
OMAHA—INTERSTATE MACHINERY & SUPPLY CO.

NEW JERSEY
NEWARK—MELCHIOR, ARMSTRONG, DESSAU CO.
RIDGEFIELD—MELCHIOR, ARMSTRONG, DESSAU COMPANY

NEW YORK
ALBANY—MELCHIOR, ARMSTRONG, DESSAU COMPANY
BROOKLYN—MELCHIOR, ARMSTRONG, DESSAU COMPANY

BRONX—MELCHIOR, ARMSTRONG, DESSAU CO.
BUFFALO—MELCHIOR, ARMSTRONG, DESSAU CO.

ROCHESTER—MELCHIOR, ARMSTRONG, DESSAU COMPANY
NEW YORK CITY—MELCHIOR, ARMSTRONG, DESSAU COMPANY

NORTH CAROLINA
CHARLOTTE—HENRY V. DICK & COMPANY
GREENSBORO—HISCO, INC.

RALEIGH—HENRY V. DICK & CO.
OHIO

AKRON—PERCY G. HANSEN
CINCINNATI—THE MERKEL BROTHERS CO.
CLEVELAND—DEBES & COMPANY

COLUMBUS—REFRIGERATION ELECTRIC SUPPLY COMPANY
DAYTON—THE W. H. KIEFABER COMPANY

HAMILTON—W. H. KIEFABER CO.
TOLEDO—HEAT & POWER ENGINEERING CO.

OKLAHOMA
OKLAHOMA CITY—HIDEKE SUPPLY COMPANY
TULSA—MACHINE TOOL & SUPPLY CO.

OREGON
PORTLAND—REFRIGERATIVE SUPPLY, INC.
PENNSYLVANIA

HARRISBURG—MELCHIOR, ARMSTRONG, DESSAU COMPANY
PHILADELPHIA—MELCHIOR, ARMSTRONG, DESSAU COMPANY

PITTSBURGH—MELCHIOR, ARMSTRONG, DESSAU COMPANY
EXPORT DEPARTMENT

SOUTH CAROLINA

COLUMBIA—HENRY V. DICK & CO.
TENNESSEE

CHATTANOOGA—PEGAR MACHINERY CO.
KNOXVILLE—HENRY V. DICK & CO.

MEMPHIS—UNITED REFRIGERATOR SUPPLY CO.
NASHVILLE—ELECTRA DISTRIBUTING COMPANY

TEXAS
CORPUS CHRISTI—HOLSWORTH EQUIPMENT CO.
DALLAS—THE ELECTROMOTIVE CORPORATION

FORT WORTH—MC KINLEY REFRIGERATION SUPPLY COMPANY, INC.
HOUSTON—D. C. LINGO COMPANY

LUBBOCK—R. R. PARTS AND SUPPLIES COMPANY
WICHITA FALLS—UNITED ELECTRIC SERVICE CO.

VIRGINIA
NORFOLK—NOLAN COMPANY, INC.
RICHMOND—A. R. TILLER, INC.

WASHINGTON
SEATTLE—REFRIGERATIVE SUPPLY, INC.
SPOKANE—REFRIGERATION PARTS SUPPLY CO.

WEST VIRGINIA
CHARLESTON—AIR CONDITIONING & REFRIGERATION SUPPLIES, INC.

WISCONSIN
APPLETON—REFRIGERATION SPECIALTY CO.
MILWAUKEE—REFRIGERATION SPECIALTY CO.

CANADA
MONTREAL, QUEBEC—RAILWAY & ENGINEERING SPECIALTIES, LTD.

TORONTO, ONTARIO—RAILWAY & ENGINEERING SPECIALTIES, LTD.

WINNIPEG, MANITOBA—RAILWAY & ENGINEERING SPECIALTIES, LTD.

VANCOUVER, BRITISH COLUMBIA—FLECK BROS., LTD.



Catalog of Complete Line Sent on Request

MODERN EQUIPMENT CORPORATION

DEFIANCE, OHIO

Both Dealers and Buyers Say 'Cut Down the Number of Models'

McCall Survey Shows Housewives Are Confused and Dealers Handicapped By Too Many Models In Appliance Lines

NEW YORK CITY—Homemakers feel that their family needs could adequately be met if the manufacturers of household refrigerators, electric ranges, and washers offered fewer numbers of sizes and models of these home appliances, according to a study just completed by McCall's magazine.

Likewise appliance retailers of all types—specialty dealers, utilities, department stores, furniture dealers, hardware stores—feel that they could do a satisfactory local selling job, without any adverse effect on appliance sales volume, if manufacturers were to produce fewer sizes and models of these three home appliances.

Both women who now own refrigerators and women who are in the market for these devices feel, with very few dissenting votes, that their family needs can be met in 4, 6, or 8-foot boxes. Dealers agree that these same three sizes will meet the demands of mass-market buyers.

On electric ranges, all the owners and prospects interviewed by the investigators said that the present number of models was so large as to be confusing or baffling. These

women believe that their family needs could be satisfied in three electric range models—a low-price range, a medium-priced model, and a high-priced model—or by four models. Most homemakers would like to see such differences in the features and conveniences of these three or four electric range models that the reasons for the differences in price would be evident at once.

About the dealers' attitude toward the present number of electric ranges in the typical manufacturer's lines, the retailers, with few exceptions, said that the present number was too large. Slightly over half the dealers recommended three models be retained in a line, a quarter of the dealers suggested four models, and just under 15% suggested that the range manufacturer have five models in his line.

One hundred per cent of the women, both owners and prospects, felt that the present number of washer models in a manufacturer's line, with the exception of one brand of automatic washers, was too large. Women felt that their own family needs could be accommodated with three or four washer models.

Dealers, too, with but three exceptions, felt that washer manufacturers, for the most part, had too many models in their lines and that the number could be reduced without retail sales volume suffering. The largest number of dealers said that their local sellers' needs could be met with a three-model washer line.

On the subject of appliance prices, retailers voted in the largest numbers for electric ranges that would retail at between \$90 and \$99.99, for models that would retail for \$190 to \$199.99, and for models priced at between \$140 and \$149.99. Among the dealers who felt that a manufacturer's electric range line should not be limited to the \$100, \$150, and \$200 ranges, there were a number of recommendations for ranges to sell for \$160 to \$174.99, for models at \$115 to \$124.99, and for ranges to sell at between \$125 to \$139.99.

Housewives Depend on Dealer To Select Size

Analysis of the conversations that women had with McCall investigators discloses that while homemakers, prior to their purchase of refrigerators, electric ranges, and washers, usually had definite ideas as to the brand or make of appliance they want to buy, only in a negligible number of cases do the women have a definite idea as to the size or model of the appliance they want, relying on the help of the dealer or retail salesman in their selection.

Mass-Market Sizes To Be Retained As Recommended By 143 Refrigerator Dealers

Size	Utility	Spec.	Dept.	Furn.	Others	Total	%
3 cu. ft.	..	1	..	..	..	1	0.7
4 cu. ft.	11	49	17	24	7	108	75.5
5 cu. ft.	1	12	4	11	..	28	19.6
6 cu. ft.	12	65	22	36	8	143	100.0
6½ cu. ft.	..	..	1	..	..	1	0.7
7 cu. ft.	..	3	2	..	1	6	4.2
8 cu. ft.	12	65	21	36	8	141	98.6

Having no preconceived ideas on the debatable subject of the number of sizes and models of appliances, McCall investigators were most anxious to get unbiased reports from consumers. Rather than in any way run the danger of influencing women's statements, the investigators asked women to recall the procedure which was followed in buying the refrigerator, range, or washing machine that was found in the home.

Women were asked which stores they visited prior to purchase of the appliance, when these visits were made, what happened in each store during their visit, how many models and sizes were inspected, etc. In other words, the woman was asked to reproduce as accurately as she could, from memory or recollection, her whole buying or shopping experience. Later, by discussing the appliance which she had bought and by discussing a possible replacement purchase, the McCall investigators were able to secure from each homemaker some idea of the sizes and models of appliances that were felt would meet each family's needs and wants.

Decreased service department expenses would result;

There would be less obsolescence; The whole line could be displayed with less risk of the appliances becoming shop-worn.

Refrigerator dealers, for the most part, suggest that the 4, 6, and 8-cu. ft. refrigerators be made available in both "standard" and "deluxe" models, resulting in six models in all.

Of the dealers who did not vote for this assortment, only two variations were mentioned with any degree of frequency. The one suggestion was that the 4-cu. ft. size be made available only in the "standard" model, that the 6-cu. ft. size be produced in both a "standard" and a "deluxe" model, and that the 8-foot box be supplied in only the "deluxe" model.

Some Would Retain 'Deluxe' Series In Line

The other suggestion was that the 4-foot box be made available only in the "standard" model, that in addition to a "standard" and a "deluxe" model, the 6-cu. ft. size be presented in a "special," and that the 8-cu. ft. size be represented by both a "standard" and a "deluxe" model.

Many dealers stated that their own sales of 4-cu. ft. boxes were small but thought this size should be retained for other dealers who served apartment house or kitchenette families.

"Doesn't it seem that manufacturers are apt to be guided by what competitors do rather than by what women want?" asked one woman who was interviewed. "If manufacturers had asked women before, they never would have brought out so many models. Women don't want them."

Something of the effect the number of models may have upon the consumer was brought out by a scene in the appliance department of a large department store, which one investigator witnessed, says the report.

A woman and her husband came in and announced their intentions to

(Concluded on Page 11, Column 1)

WE'RE READY! WHO'S NEXT?

What Progressive Manufacturer of

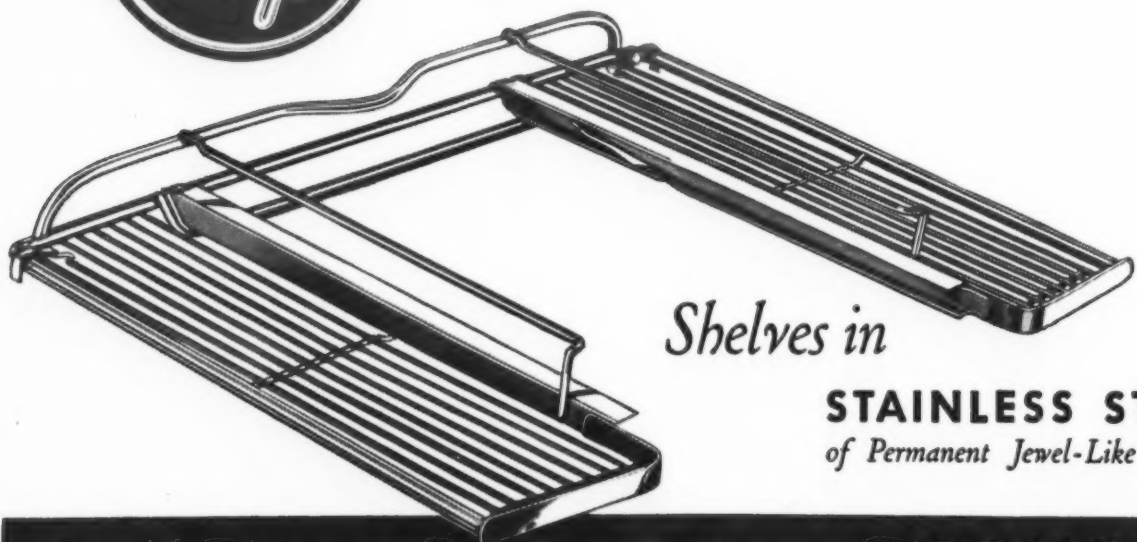
REFRIGERATORS will be next

to install

STAINLESS STEEL SHELVES

as Standard Equipment?

Leading refrigerator manufacturers are getting in line . . . adding WWP STAINLESS STEEL SHELVES . . . that potent new selling feature . . . to their 1941 lines. Will you be next to meet this demand of housewives and dealers? Whenever you are ready . . . be sure to get in touch with the leader in this industry . . . WALL WIRE PRODUCTS CO. Find out how easily and economically this permanently beautiful, new stainless steel shelving can be added to your line. Write, wire or phone. A WWP Engineer will gladly call on you to discuss plans.



Shelves in

STAINLESS STEEL
of Permanent Jewel-Like Beauty

WALL WIRE PRODUCTS COMPANY
948 GENERAL DRIVE • PLYMOUTH, MICH.

WHO WANTS \$14.01?

That's the profit you make on a Gilmer "Eye-ful" Tower Belt Assortment, that takes up only a little room on your counter and does its own selling for you, day in and day out. Dealers who've tried it say it's a sweet money-maker.

35 ASSORTED GILMER V-BELTS

Fast-selling, easily identified belts for leading makes of refrigerators and other appliances you service constantly.

1 GILMER HANDIMETER

Measures any belt brought in, from ¾" to ¾" wide, up to 75" long. Saves you time, prevents misfits.

1 GILMER "EYE-FUL" TOWER

15" wide circular Silent Salesman display stand that holds up to 70 belts. Has perpetual inventory form on back.

INCLUDED FREE

A copy of the new 1940 edition of "America's Belt Bible" listing belts for 6800 models, 153 makes of refrigerators, also oil burners, stokers and other appliances you service.

ALL FOR
\$20.96

YOU GET BACK
\$34.97

Your PROFIT
\$14.01

"America's Belt Bible"—Thousands of service men say they wouldn't be without this handy helper



L. H. GILMER COMPANY, Tacony, Philadelphia, Pa.

Gentlemen: Yessir, that's sure a BARGAIN. Send me one of your complete Gilmer "Eye-ful" Tower Assortments and bill me (\$20.96) through your nearest jobber.

NAME _____
ADDRESS _____
CITY _____

Dealers Would Like To See 'Specials' and 'Off Sizes' Eliminated In Appliance Lines

(Concluded from Page 10, Column 5) the salesman with the statement, "We want to buy a washing machine." If ever a prospect was pre-conditioned and in a receptive state of mind, they were.

Then the looking began. On the floor were models of three makes of washers. Fifteen different models of one make—some with pumps, some without—were displayed. Altogether, there were 25 different models on the floor.

They looked at this and they looked at that, and the salesman talked and talked and did an excellent job of explaining the differences in features of each model which would justify the differences in price. Also, he did a good job of trading up and of steering the prospects toward models in keeping with their needs. The looking at various models went on, the questions continued, and the salesman talked on.

Uncertainty and confusion had just about taken command in three quarters of an hour. By the time an hour had passed, confusion had won the victory. The woman and her husband—who had come in ready to buy—left without having been able to make up their minds, and the sale was lost.

When the salesman approached your reporter after their departure, his remark was, "Beaten by too many models. If the manufacturers would only cut the number of models they produce, our selling job would be easier."

Sizes of Refrigerators Owned By Women Interviewed In McCall Survey

Size	All Cities Number	Percentage
4 cu. ft.	41	5.55
5 cu. ft.	88	11.92
6 cu. ft.	422	57.18
7 cu. ft.	69	9.35
8 cu. ft.	99	13.41
9 cu. ft.	4	0.54
10 cu. ft.	10	1.36
11 cu. ft.	1	0.14
12 cu. ft.	1	0.14
Size Unknown	3	0.41
	738	100.00

"At present, women buyers are confused by so many models in all of these appliances," said one dealer. "It becomes difficult for them to make a selection and then even after they have decided, their minds are often filled with doubts and uncertainties about whether they made the right choice."

One Dealer's Viewpoint On Small Line's Effects

"If manufacturers would incorporate the popular features—that is, the features which women want—in three or four models, everybody would be so much better off than under present conditions."

"You ask whether the decrease in the number of models might possibly have an effect upon our sales volume. No, sir. That would be the least of my worries. Fewer models, in my opinion, wouldn't affect our sales in the least, unless to improve them because of lower prices and easier selling. Give us fewer models and I think the resultant gains will profit manufacturer, dealer, and public."

128 women—17.41% of the 738 interviewed—the size of whose refrigerator is known—reported their boxes as being too small. These results tabulated are demonstrated in the table.

Refrigerators Found To Be Too Small

4 cu. ft.	27—65.85% of total 4's
5 cu. ft.	43—48.86% of total 5's
6 cu. ft.	45—10.66% of total 6's
7 cu. ft.	10—14.20% of total 7's
8 cu. ft.	3—3.33% of total 8's

"... I was influenced by the size of my icebox and bought my automatic refrigerator about the same size. I find that it would have been much better if I had purchased a larger one," was a typical user's comment about having bought too small a refrigerator.

All but seven dealers recommended a reduction in the number of refrig-

erator models in the various mass-market sizes. The other 136 were positive in their recommendation that a reduction is advisable. Their attitude was made entirely clear by unquestionably emphatic language.

Of the 143 retailers who answered this question, only the seven noted above entertained any fears over a possible adverse effect upon sales. Those who were of the opinion that sales would increase just about equaled those who thought no direct effect would result, unless there were accompanying price reductions. All retailers were convinced that the selling problem would be materially simplified.

Total of 6 Models Gets the Most Votes

On the question of the number of models recommended for retention in the lines, an overwhelming majority of retailers advocated not more than a total of six models in three sizes—a standard and a deluxe in each.

The denunciation against "specials" and "stripped" models were many and vehement, says the McCall report. More than 90% of the retailers were dead against them.

The number of present models of electric ranges is more than necessary, it was indicated, with all but eight dealers recommending reduction in number. Of these eight, one was carrying a line of six models which satisfied him; two carried a make in which there were five models, three advised no reduction whatsoever; and two others were undecided, but inclined toward reduction.

Beyond identifying them by price, models recommended for discontinuance were few and not of important proportions. The only model receiving somewhat sizable condemnation was the one having a lower front of base panels instead of drawers.

Perhaps it should be pointed out that more than half of the dealers recommended three models as a maximum, while 76.8% recommended either three or four models.

Find It Difficult To Display Full Line

"We don't display the full line—wouldn't and couldn't. We wouldn't because we think it unwise to have so many different models on the floor. It confuses the customer. We couldn't even if we wanted to because of the investment." (This from a sizable dealer.)

"We used to display many more models than we do today," said another. "Since decreasing the number of sales really has improved. We believe it is because the fewer models make it possible to sell a woman more easily—and it's easier for her to make a choice. Another important thing—our investment is smaller and our turnover more frequent."

The McCall investigators called on 1,804 consumers and 147 appliance retailers in Albany, N. Y.; Pittsfield, Mass.; Hartford, Conn.; Richmond, Va.; Winston Salem, N. C.; Detroit; Cedar Rapids, Iowa; and Richmond, Ind.

Calls were made at random, on 738 women who owned gas or electric refrigerators, on five women who were planning to buy a new refrigerator, and on 143 dealers in these eight communities who sold refrigerators. Calls were made on 508 electric range owners, on four women planning to buy an electric range, and on 112 appliance dealers who were carrying electric ranges as well as 10 dealers who do not now handle electric ranges. On washers, 509 consumer-owners were interviewed in person, 40 prospects were talked with, and 128 washer dealers contributed their views.

G-E Orders Up 40% In Second Quarter

SCHENECTADY, N. Y.—Orders received by General Electric Co. during the second quarter of the year amounted to \$115,163,267, an increase of 40% over orders for the same period of 1939.

Orders for the first six months totaled \$212,653,314, a 26% increase.

May Mart Appliance Sales Gain 18.5%

CHICAGO—Sales of housewares, major appliances, and small appliances by manufacturers in the Merchandise Mart, aided by a break in the weather, advanced 18.5% during May over the same month a year ago, and 12.4% over April, according to the Mart's monthly barometer of wholesale buying.

Advancing metal prices were credited with a small part in stimulating the month's sales, which in the opinion of manufacturers may be considerably enlarged as the actual manufacture gets under way in the President's defense program.

Sales in refrigerators and gas ranges were reported particularly heavy as scattered reports were found of actual dog-eating of heavy machinery used in stamping large metal parts by the industrial mobilization units of the Army and Navy, carrying a threat of early curtailment of production by diversion of factory facilities to produce war materials.

Plastics Contest Again Open To Manufacturers

NEW YORK CITY—To make better known the latest developments in plastic materials and the techniques of handling them, Modern Plastics Magazine is sponsoring its Fifth Annual Modern Plastics Competition.

This competition is open, without fee or obligation, to all companies using plastics for their products, to designers, engineers, molders, laminators, fabricators, raw material suppliers, and machinery and mold manufacturers. Any product designed or placed on the market since Sept. 1, 1939, in which any sort of plastic material is a component part, is eligible for entry.

The competition and concurrent display of entries will be held at the offices of the sponsoring publication, 122 E. 42nd St., New York City. Deadline for entries is Aug. 15.

Because of several innovations effected last year in the use of

plastics, a reclassification of the contest divisions has been made. The new classifications are: architecture, business and office equipment, communications, decorators' accessories, furniture, household, lighting, machinery and appliances (industrial), novelties, scientific, sporting goods, games and toys, style and fashion, transport, miscellaneous. There will be three awards of equal standing in each group.

Judges will be: Alfred Auerbach, editor of Retailing; Harvey Wiley Corbett, architect; William A. Kimbel, president of the American Institute of Decorators; Morris B. Sanders, architect-designer; A. M. Swigert, member of production research division staff of Chrysler Corp.; Harold Van Doren, industrial designer and author of a guide to industrial design.

New G-E Dealer In Delmar

DELMAR, N. Y.—The recently reorganized firm of White Bros., 123 Adams St. here, is now authorized General Electric dealer here.

A Quick Trick for Ice Cubes in a Flash!

Out of the Sleeve—Instantly

A slight forward pull of the fingers on the tray lifter instantly loosens the Inland Shucker Tray from the sleeve.

THE INLAND SHUCKER ICE TRAY

The Inland Magic Finish Shucker Ice Tray is the standout choice for maximum convenience when friends drop in and a few ice cubes or a brimming bowlful are needed.

A touch on the tray lifter and the fast freezing Shucker Tray is out of the freezing compartment in a flash—then simply lift the handy handle and get a few ice cubes or a trayful, full-sized and unshattered, in less time than it takes to tell it.

The carefree convenience of the Inland Magic Finish Shucker Tray is easy to demonstrate and sell. That's why it's ideal as original factory equipment by refrigerator makers as well as for replacement sales by dealers. For details, prices and discounts write to

INLAND MANUFACTURING DIVISION
GENERAL MOTORS CORPORATION
DAYTON, OHIO CLARK, NEW JERSEY

For a Few Cubes

As illustrated, the handy handle is lifted to 30° or 40° and a few cubes are instantly loosened (without disturbing the others) to fall into the pan.

For a Trayful

The handy handle is pulled as far over as it will go, then returned as illustrated to an upright position and a whole trayful of cubes drops into the pan.

INLAND MANUFACTURING

Rubber, Plastics and Metal

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An Example To Ponder

COMMERCIAL refrigeration has been going through a revolution of its own during the last few years. In fact, the upheaval hasn't stopped upheaving yet. There's still a deal of groping around for a system that will work without leaving an aftermath of hangovers.

Once upon a time the "major manufacturers" (those with a big stake in the household refrigeration business) had the thing all sewed up. They operated through "distributors" who were really big dealers, each with a fairly large hunk of territory and little or no competition from other dealers for the same make of machines.

Changes In Direction Of Stream of Selling

This system went along swimmingly, with everyone concerned making satisfactory profits, until two things happened:

(1) Makers of commercial cabinets found that the same salesman could more easily sell both machine and cabinet than two different salesmen could.

(2) A number of small manufacturers of compressors entered the field, and began selling at lower prices through totally new channels.

These two happenstances soon began to dovetail. Makers of commercial cabinets made deals with the then-small manufacturers of compressors, and either installed the compressor into the cabinet—making it a complete unit—or gave their agents this line of machines to sell.

Good Salesmen See Good Thing & Embrace It

This made things very tough indeed for the "major" manufacturers. What hurt them most was the rapidity with which their good salesmen deserted the sinking ship. They found they could make so much more money selling case-and-machine (the case is normally more than three or four times as costly as the machine) than just machines that they lost

little time in signing up with the case people.

These "small" manufacturers of compressors also discovered that service men knew when a compressor needed to be replaced sooner than anyone else did, and weren't averse to turning an honest penny by selling the compressor themselves.

Parts Jobbers & Service Men Get In Game

To make machines available to such service men, these "small" manufacturers stocked up refrigeration parts jobbers with their units. This tapped a very large market indeed.

Before very long the "small" manufacturers had become the big manufacturers in the commercial refrigeration business, and the "major" manufacturers began wondering if something wasn't wrong with their system of distribution.

As a result, we have both squadrons of manufacturers going after the business this year hot and heavy, and the tussle is turning into quite a melee.

Indiscriminate Franchising May Have Repercussions

What distresses a good many old hands in the business is the observation that in the pell mell of competition, too many dealers are being appointed. People who have little business being in the business are getting franchises and stock on consignment.

This not only makes it tough on the type of dealer who can do the industry some good, but is pointing directly toward sharply increased sales of aspirin to the manufacturers who are indulging in these temporary sales stimulants.

What Happened When Household Boys Tried It

Anybody who was in the household refrigeration business remembers what the insane race to appoint dealers in 1937 did to the industry in 1938 and 1939. Stocks at the end of 1937 were so enormous that factory wheels scarcely began turning in 1938 until mid-spring.

Cut-price selling avalanched across the country, leaving behind it a wake of ruined dealers and glutted markets. Practically everyone lost money, including the manufacturers.

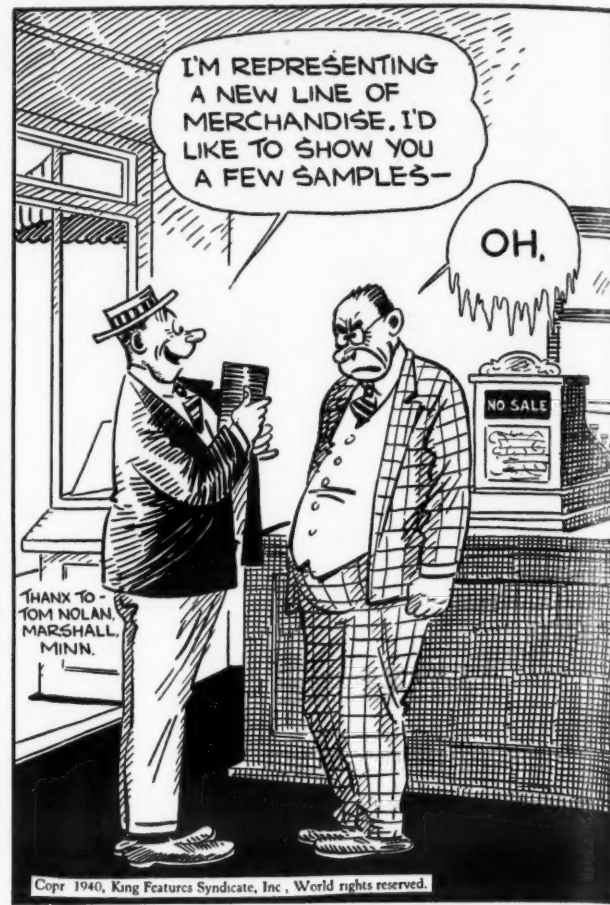
Overstocks Had To Be Sold & Resold; New Models Stagnant Meanwhile

Some of the industry's best dealers left the business, vowing never to return. And, of course, thousands of the fly-by-nights were washed out and washed up also.

What made matters even worse for the "legitimate" dealers was the fact that they had to compete not only with enormous stocks of unsold 1937 models, but with loads and loads of once-sold 1937 models as well.

Why? Because the inexperienced, fly-by-night dealers appointed in the mad rush to get "extensive distribution and multiple display points" sold refrigerators to people who couldn't or wouldn't pay for them. After

They'll Do It Every Time . . . By Jimmie Hatlo



repossession, these units were thrown back on the market.

The false prosperity of 1937 was highly expensive to household refrigerator manufacturers and distributors in 1938 and 1939. It may be that manufacturers of commercial refrigeration will find it interesting to note some of the case histories of household refrigeration manufacturers who once operated on the "extensive distribution" theory.

LETTERS

Ken Newcum Checks A Headline

Superior Valve & Fittings Co.
1509 W. Liberty Ave.
Pittsburgh, Pa.

Editor:

It is beginning to appear that I am conducting a one-man campaign against headlines in the News that might be misleading to members of our particular part of the industry.

For example, the article at the bottom of column 4, page 14, May 29 issue, is headed as follows: "New Parts Distributor Organized in Little Rock."

I would take from the article that this company will be distributor of refrigeration and heating equipment, and not what we would call a "parts" distributor, and which might be mistaken by some of the parts manufacturers as a parts jobber.

I doubt very much if any harm has been done. However, it might be worth your while to consider the effect that such a headline might have on members of the parts industry, especially those who are inclined to send jobbers' prices to anybody whom they have any reason to believe are entitled to same.

KEN NEWCUM,
Vice President

Answer: A check with Wholesale Appliances, Inc., whom the story concerned, shows that what Mr. Newcum suspected is true, and a rebuke is in order for a careless headline writer.

Writes Albert Ahrens of Wholesale Appliances, Inc.: "We are state distributors for Norge refrigerators and Temco heaters."

Export Men Find News 'Invaluable'

Remington Air Conditioning Co.
44 Beaver St., New York, N. Y.

Sirs:

Enclosed you will find our check covering three copies of May 1, 1940 issue of AIR CONDITIONING & REFRIGERATION NEWS.

Please send two of these copies to our New York office, addressed to the attention of the writer. The third copy should be sent to our export manager, C. M. Stuart.

We have long felt that your publication is invaluable to anyone in our line of business and are sure that our export manager would concur in this opinion even though his constant

travels undoubtedly prevent his being a "regular" reader in the usual sense. Your issue of May 1, with its splendid article giving the "Specifications on 1940 Self-Contained Air Conditioners" is of especial value to anyone in the field who wishes to keep abreast of the latest developments in the air conditioning field.

WAYNE CLEMENS,
Export Department

Service Articles Useful To Bandstra

Ever-Ready Refrigeration Service
11048 Wentworth Ave.
Chicago, Ill.

Editor:

Having just received my first copy of your very fine paper dated June 5, I am wondering if there is a possibility of receiving the previous issue, May 29. There is a follow up article on servicing equipment and I would very much like to have the first article of this series.

Thanking you and hoping to be a continued subscriber.

TED BANDSTRA

'It Couldn't Have Been Expressed Better'

Westinghouse Electric & Mfg. Co.
246 E. Fourth St., Mansfield, Ohio

Dear George:

Just a line to say—congratulations on the splendid editorial in your May 29 issue. It couldn't have been expressed better.

ALVIN L. KRIEG

'Clearest Outline Of the Situation'

Seller, Wolfe & Associates, Inc.
Advertising
3630 W. Fort St., Detroit, Mich.

Editor:

Take a bow on both the headline and text of your international comment in the issue of June 19.

It is the clearest outline of the situation that I have read.

DUDLEY M. CARSON

Carrying on Traditions And Precepts

Servel, Inc.
Evansville, Ind.

Dear George:

Permit me to extend to you my expressions of confidence in your exceptional ability to carry on the traditions that Mr. Cockrell so ably inculcated into the precepts of the publishing organization he established.

GEORGE L. ROACH,
Assistant to the President

Ecclestone Locates An Old Friend

Kelvinator
163 Georgia St.
Buffalo, N. Y.

Dear George:

To bring you up to date on who I am and where I was and where I am now—I was sales manager for F. W. Wolfe, Inc. here for many years, having left there to go with Rex Cole, Inc., New York. I left

New York to come north again and am now associated with Nash-Kelvinator Corp.—Factory Branch—here in Buffalo as district representative for the metropolitan area.

Our last short visit together was in Cleveland Nela Park at the Merchandising Clinic Department Store directed by my good friend, Ralph Cameron several year ago (you snapped me checking in with your candid camera and this picture in the News was the means of locating my good friend, E. Green who was then working for Frigidaire in Sydney, Australia, and whom I had not heard from in 25 years).

Now to the real purpose of this letter. My heartiest congratulations to you on your appointment as successor to Mr. Cockrell. I do believe the same high standards shall prevail in REFRIGERATION NEWS under your guidance and direction.

May good luck and success follow you always.

J. M. ECCLESTONE

'Sandy' Pratt Offers To Help

California Refrigerator Co.
1077 Mission St.
San Francisco, Calif.

Dear George:

I was more than shocked when I received the News of the 29th and discovered that my good friend Frank had gone.

I know you are going to be able to carry on in his footsteps and even produce a better paper as time goes on. George, if there is anything I can do for you out here at any time, please call on me to help, for I have had so many courtesies and favors from Frank, you, and the News, that I really owe it to those who have been left to carry on Frank's work.

CLARENCE F. PRATT, Pres.

'Courageous, Impartial Policies of the News'

Midwest Mfg. Co.
Galesburg, Ill.

Dear George:

On my return to the office this morning from a two weeks' trip, I learned with great sorrow of the passing of Mr. Cockrell. The refrigeration industry has indeed lost a leader. The courageous, impartial policies of the News deserve great esteem. I am sure you and your staff will carry on in the same policies.

Our associations with the News will continue as before and we wish you continued success.

J. C. BATTLES,
Sales Manager

From M. G. O'Harra

Norge Division
Borg-Warner Corp.
Detroit, Mich.

Dear George:

I have failed, owing to press of circumstances, to write you to express my sympathy in the loss of your close associate "F. M."

Please convey my heartfelt sympathy to his family as well as your associates.

M. G. O'HARRA,

Vice President In Charge of Sales

Appointments and Promotions

Crosley Executive



LEWIS M. CLEMENT
Manager of engineering division,
Crosley Corp. (story on page 1).

Dealer Appointments And Openings

Electrolux Outlet Appointed

ALBANY, N. Y. — Interstate Plumbing Supply Co., Inc. has been appointed distributor for Servel Electrolux refrigerators in this area. This company, which maintains headquarters here and has a branch in Poughkeepsie, N. Y., distributes largely through contractors and installers, it is reported.

Dealer's Store In Hotel

LITTLE ROCK, Ark. — Pfeifers' Home Appliance Shop, claimed to be one of the largest and most modern of its kind in the city, has been opened on the street floor of the Lafayette hotel here. Opening-day advertisements were concentrated on Frigidaire refrigerators, Philco, RCA, and Emerson radios, Bendix home laundry units, ABC washers, and Vulcan ranges.

New Boston Dealer

BOSTON — J. W. Souter, Inc. has opened at 68 Franklin St. here to deal in Philco and Frigidaire refrigerators, Bendix home laundries, and ABC washers. James W. Souter is president and treasurer; Joseph A. Souter is vice president.

Appliance Co. Sells Airtemp

BALTIMORE — Appliance Sales & Service Co. will handle the Airtemp line of heating units in eastern Maryland.

Kuser Moves Store

BALTIMORE — A. E. Kuser, electrical appliance dealer here, has moved from 1222 W. North Ave. to 2039 W. North Ave.

Gast Bros. Buy Out Marohl

SHAWANO, Wis. — Herman and Arthur Gast have purchased the interests of Peter Marohl in the Shawano Hardware Co. The firm is dealer for Frigidaire.

Dallas Dealer Sells Two Makes

DALLAS, Tex. — General Radio & Furniture Co. has been appointed a dealer for Hotpoint and Norge refrigerators. George S. McGhee is store owner.

R. W. Jones Made V. Pres. Of St. Paul Foundry Co.

ST. PAUL — R. W. Jones, formerly western manager for Leonard and prior to that western manager for the old Copeland Products Corp., has been elected executive vice president of St. Paul Foundry Co., to act as general manager of all of the company's activities.

An important phase of the company's business is the manufacture of railroad supplies.

Conger Directs Sales Promotion For N. Y. Power & Light

ALBANY, N. Y. — D. F. Conger has been appointed sales promotion advisor in the refrigeration and general commercial department of New York Power & Light Corp.

Mr. Conger had been sales promotion supervisor of the utility's Albany district since 1934. That position will now be filled by Hugo E. Rausch, who for 10 years has been in charge of sales in the Glen Falls district.

Hefter Appointed Sales Manager For Ero Mfg. Co.

CHICAGO — E. G. Hefter, recently in charge of metropolitan sales promotion for Stewart-Warner Corp., has been appointed general sales manager for Ero Mfg. Co., Chicago manufacturer of automotive accessories and sporting goods.

Mr. Hefter, who for many years was president and general manager of Great Western Auto Supply Co. of St. Louis, subsequently held executive sales positions with the Zenith Radio Corp. and General Household Utilities Co. (Grunow).

Grover Fillbach Heads Heil Co. Milwaukee Branch

MILWAUKEE — Grover C. Fillbach, retail sales manager of the Heil Co. for the last eight years, has been named president of the Heil Automatic Heating Co., Inc., new distributing agency in Milwaukee county for Heil heating and air conditioning products. The new distributing firm was established by the Heil Co. William H. Morgan is secretary-treasurer.

Graybar Transfers Whitcomb To Kansas City Branch

WICHITA, Kan. — Roger Whitcomb, formerly with the Graybar Electric Co. branch here, has been transferred to that company's Kansas City branch. Mr. Whitcomb is the son of R. A. Whitcomb, Wichita appliance dealer.

Rex Tune Opens Appliance Store In Starkville, Miss.

STARKVILLE, Miss. — Starkville Appliance Co. has been opened as a dealership here by Rex Tune, formerly with Starkville Furniture Co., and Felix S. Seales, formerly of Columbus, Miss. A complete line of appliances will be merchandised.

Hays Named Manager Of E. Moline Store

EAST MOLINE, Ill. — Elliott Hays has been appointed manager of the appliance department of Wendt's Furniture Store, Crosley dealer here.

Heads Bendix Training

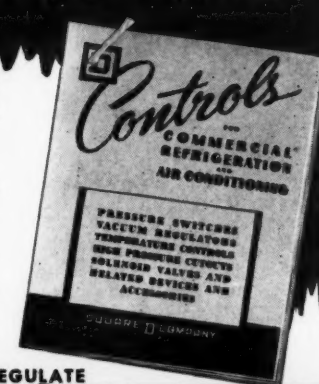


JACK FROHLICH
Formerly with Norge and Dartnell Corp., heads Bendix sales training.

SQUARE D IN REFRIGERATION

Send for your Copy of this
Controls Catalog

Includes Pressure and Temperature Controls—High Pressure Cutouts—Solenoid Valves and Related Devices. This comprehensive reference catalog will be sent upon request.



DO IT ALL WITH SQUARE D—SWITCH • PROTECT • REGULATE

Jobber
Inquiries
Invited

SQUARE D COMPANY
REGULATOR DIVISION
DETROIT • MICHIGAN

STAINLESS
"All is not gold that glitters"



**REFRIGERATOR SHELVES
MADE OF PITTSBURGH
STAINLESS STEEL WIRE ARE
TRULY STAINLESS**

The high finish on refrigerator shelves made of genuine Stainless Steel Wire is permanent, because being truly *stainless* clear through, the life of this finish is not dependent upon a surface coating which sooner or later must wear through. Only genuine stainless steel is truly stainless, with the ability to permanently resist discoloring and corroding influences encountered in refrigeration service.

Ask your manufacturer to furnish shelves made of *Pittsburgh* Stainless Wire. The slight premium for these *genuinely stainless* shelves is but a negligible part of the cost of a refrigerator, worth far more than their cost in helping you sell more refrigerators.

PITTSBURGH STEEL COMPANY
1647 GRANT BUILDING PITTSBURGH, PA.

Pittsburgh Stainless Wire

High Purity and Dryness	Prompt Shipments Nationwide Distribution	Every Cylinder Tested	 Artic REG. U.S. PAT. OFF.	20 Year Performance Record	Helpful Technical Assistance
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DU PONT
E. I. DU PONT DE NEMOURS & CO. (INC.)
The R. & H. Chemicals Dept.
Wilmington, Delaware
District Sales Offices: Baltimore, Boston, Charlotte,
Chicago, Cleveland, Kansas City, Newark,
New York, Philadelphia, Pittsburgh, San Francisco

Los Angeles Jobber Makes It Easy To Order

FOR QUICK SERVICE FROM THIS CATALOG and for easy, accurate addressing of your inquiries and orders, AFFIX THE ATTACHED ADDRESS LABEL TO YOUR ENVELOPE. REFRIGERATION SERVICE, INC. pays the postage.

BUSINESS REPLY ENVELOPE

Postage will be paid by
REFRIGERATION SERVICE, INC.
3108 REVERLY BOULEVARD
LOS ANGELES, CALIF.

FIRST CLASS
PERMIT No. 969
(SEC. 510 P. L. & R.)
Los Angeles, Calif.

Refrigeration Service, Inc., Los Angeles parts and supply jobber, is making use of this novel sales message by supplying its customers with pads of these stickers which can be attached to any envelope. Use of these labels saves the customer not only postage but also the time and bother of addressing envelope.

This business reply sticker, only recently approved by the U. S. Post Office, can be attached to buyer's own envelope, thus saving him postage.

Standard Parts Drops Jobbing Activities

CHICAGO — Standard Refrigeration Parts Co., active for years in both the manufacturing and jobbing of refrigeration parts and supplies, has discontinued all wholesaling activities in order to concentrate on the manufacture of refrigeration appliances to be marketed under the name of "Standard."

The jobbing business of the Standard organization has been sold to the Harry Alter Co., jobbing firm with headquarters here.

Midwest Jobbers Meet For Work and Play

DAVENPORT, Iowa—Members of the Midwest Refrigeration Supply Jobbers Association combined business with pleasure at a one-day meeting here June 24.

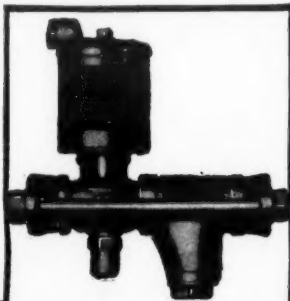
Following a business session in the morning, the jobbers met with a number of manufacturers' representatives at a luncheon. In the afternoon both the jobbers and the representatives were the guests of J. S. Kimmel, president of Republic Electric Co., at his Mississippi River estate outside of Davenport.

SOFTNESS

You get it in WOLVERINE TUBING

—Buy From Your Jobber—

WOLVERINE TUBE CO. DETROIT



TYPE EF

Electrimatic SOLENOID VALVES

for FREON—METHYL—SO₂
Flanges for pipe or OD tube.
Manual Opening Stem.
External Strainer Optional.

THE ELECTRIMATIC CORPORATION
2100 INDIANA AVE., CHICAGO, ILL.

Calif. Service Men Tell Tall Tales

'True-To-Life' Yarns Reflect Lighter Side of Service Work At Los Angeles Meeting

LOS ANGELES — A "Testimonial Night," at which service men told some of their unusual and entertaining line-of-duty experiences, featured the June meeting of the Los Angeles chapter of R.S.E.S.

Originator of the novel tall-tale session was John Payne of Refrigeration Service, Inc., president of the local chapter. Many odd, interesting, and amusing stories were told of service experiences and laughs were at a maximum.

Eddie Nelson, Union Ice Co., recounted the break of an ammonia pipe in a big quick-freeze, low temperature plant, where the liquid ran over the floor like a full division of cockroaches on a spree. The repair crew put down boards to keep from the ammonia from seeping into their insoles, fixed the pipes, and swept the solution out—all this without benefit of masks. Everything was fine until the warm air outside hit them and got in some devastating licks.

H. Keller came up with a honey about a service man (Mr. Keller refused to admit he was the man) who was called on a hurry call to the home of a supposed college graduate. Pointing to the motor atop the refrigerator, he announced: "My battery is dead, I want to get it recharged."

The service man laughed and returned: "That's no battery, that's a motor."

The customer, getting hot under the collar, asked: "Are you trying to tell me I don't know what I have?"

The service man squinted, scratched his head, then went over and rubbed the name plate. "By God, y'have," he declared in evident astonishment. "I haven't seen one of these in a long time. It takes a special charger, though. It'll cost you eight bucks."

"Okay! I told you it was a battery, didn't I," said the now-pleased customer, perfectly satisfied.

The July meeting of the chapter calls for a tour of the Eastside Brewing Co. plant.

Display Combines Eye Appeal With Utility



Changeable product cards and convenient pockets for product literature are among the chief features of this new Peerless jobber display.

Express Agents Will Deliver and Set Up New Peerless Display Unit For Jobbers

CHICAGO—Recognizing the lack of adequate display material for its jobber outlets, Peerless of America got busy recently and dreamed up a new display unit, combining attractiveness and utility, which it has distributed among its full-line jobbers to encourage them to push Peerless products.

Eye-catcher of this display—which is about 3 feet high and is made up in attractive colors—is the cut-out of an exceedingly pretty young miss in an extraordinarily abbreviated and revealing Eskimo suit.

Outstanding feature of the unit, however, is that its message can be changed each month merely by inserting a different "Product of the Month" card in the frame provided for this purpose. Jobbers having this display will be kept supplied with a different card each month.

A number of large, substantial pockets are provided for holding different pieces of literature, including the company's monthly house organ, "The Peerless X-Changer."

To ensure this display unit getting the proper attention, Peerless is having each one delivered by an American Express messenger who will uncrate the package and set up

the display wherever the jobber desires—and all free of charge.

Prior to shipment of these displays, the company sent out two form letters to jobbers scheduled to receive the display units.

The first explained the idea of the unit, and pointed out that the first Product of the Month card would feature the Peerless water saver. This message was designed to tie in with the July campaign scheduled for this item. The second bulletin detailed the delivery plan, and was accompanied by two pictures of the display itself.

Counter-Espionage Is Sideline For Dallas R. S. E. S. Members

DALLAS, Tex. — Members of the Lone Star chapter of the National Refrigeration Service Engineers Society voted unanimously at a recent dinner meeting to turn themselves into amateur G-Men and to aid in the current drive against subversive or "fifth column" activities by reporting to the Federal Bureau of Investigation any such activities with which they come in contact.

A motion to this effect was introduced by J. M. Bibb, head of Bibb Refrigeration Service Co. and one of the instigators of the campaign which resulted in the formation of this chapter, first to be organized in Texas.

Charter of the new Lone Star chapter was presented to the group at this meeting by H. T. MacDermott of Chicago, national secretary of the R.S.E.S. The chapter had a reported charter membership of 40 service men.

In presenting the charter, Mr. MacDermott outlined in detail the policies and purposes of the organization, emphasizing the fact that it was in no way affiliated with any labor union or similar group, and that the use of strikes as an instrument of policy was forbidden by the very nature of the organization.

Officers who had temporarily been elected to serve when the group was in the process of organization were unanimously instructed to continue in office through the current year. H. W. Cline, head of Southern Refrigeration Co., is president.

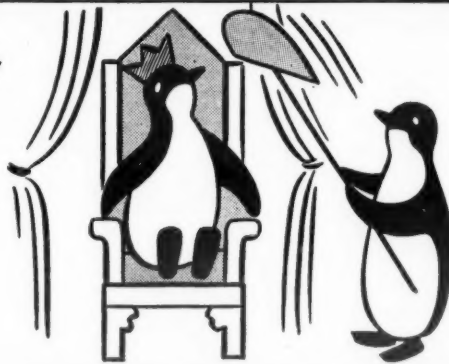
Mr. Cline announced that great emphasis would be placed on the educational side of future meetings, and that a large number of committees would be appointed to accomplish this end.

The chapter voted to accept the invitation of Wolverine Tube Co. to hold its next meeting in that company's warehouse, as part of an open house program.

Army Contract

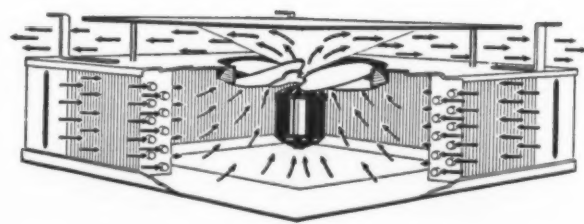
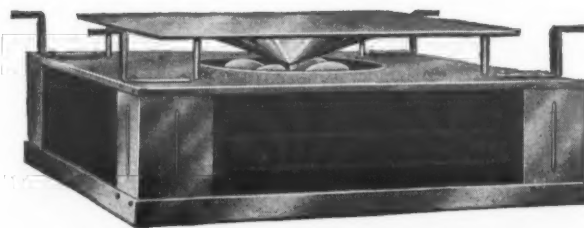
LOS ANGELES — Southern California Refrigeration Co. here has been awarded the contract to furnish refrigeration for the alterations being made to the hospital building at March Field, Calif., the U. S. Army air base near Riverside.

PERFECT AIR DISTRIBUTION at Low Velocity with BUSH RECOLD SUPREME UNIT COOLER



A distinct advance in forced air evaporator design . . . a large amount of surface . . . low air speed . . . wide distribution . . . in a compact unit. Warm air is drawn in on four sides . . . cooled evenly and economically . . . expelled gently against the top distributing cone . . . spread along box walls at low velocity. A built-in heat exchanger insures maximum efficiency. BUSH Supreme Unit Cooler air velocity averages 275 F.P.M. . . . conventional type fan units average 600 F.P.M.

WRITE FOR CATALOG AND PRICES



Plenty of Sales In Salem, Ill., Another Oil Town, But Municipal Power Plant Can't Keep Up

By T. T. Quinn

SALEM, Ill.—Here's the set-up in this town:

Oil wells are producing an average of around 225,000 barrels of oil every 24 hours.

The population has increased from about 4,000 to close to 10,000 in the last couple of years.

Living quarters of any sort have been at a premium because of the influx of oil field workers—there's been a great amount of new home construction, and an almost equal amount of remodeling of large single homes into two and three-family apartment structures.

Downtown streets are crowded every day, and on Saturdays you can't find a parking space in the business district, unless you're just lucky enough to be driving by when somebody else is backing out.

There's plenty of money in town, and all the new homes and remodeled apartment dwellings are real prospects for refrigeration and appliances.

Sounds like an appliance dealer's idea of Paradise, doesn't it? Well, it is mighty good, but there's been one big catch—

With the extra demands on it made by the oil fields and all other additional local uses, the municipal power plant hasn't been able to meet the load with its original equipment. As a result, the power has been shut off in certain sections of the city during certain hours of the day and evening, as a strictly emergency measure.

The power plant is installing new equipment which will more than meet all anticipated requirements, but it isn't expected to be in operation before July 15. Meanwhile, when the power's off, movie houses can't operate, gas stations can't use their pumps, electric refrigerators can't freeze desserts, and electric ranges are just something to look at. Three filling stations already have installed Diesel plants, to be independent of the power shortage.

Sales in the community are far and away in advance of their 1939 marks, and "specials" have had a pretty big play. Electric ranges have been catching on better than in the past.

The weather hasn't been any too encouraging to sales, either—so dealers are getting up steam for use after July 15, when the weather will be warm, power will be plentiful, and they can really "go to town."

Shortage of 'Specials' Loses Sales For Allen's

Although business so far this year has been considerably better than during the same period of 1939, Allen's Appliance Shop, Westinghouse dealer in Salem, reported that several sales had been lost to competition because of a shortage of the \$114 "special" models.

Not all of these were to "on-the-fence" prospects, either, the company said—several were cancellations of orders already signed, but abandoned when no boxes could be obtained to fill them. The store had just received a shipment of five special models, but didn't even have one to show during the preceding 40 days.

"We could have sold a good many more special models, if we had been able to get delivery on them," Mrs. Allen, who is in charge of the office, reported. "For a while, we tried 'selling up' without a special model to compare the others with—but then we had to give up even on that procedure."

"Selling up hasn't been hard for us—when we had a low-priced model on the floor—but when people come in and ask to see the special and you have to admit you don't have one on the floor, they think you're trying to hold out on them—and they sort of lose interest in the rest of the line."

The specials were a great boon to prospect interest, she reported. It wasn't necessary even to advertise them locally, so great was the interest national advertising had created.

Mrs. Allen had a call out for the local sign painter even then, to get him to letter the store windows with an announcement that special models

were again on display. "That's all the advertising we'll need," she declared. "There'll be 50 people in here by Saturday night, all asking to see one of them."

Best market for the low-price leaders, she said, was among homeowners who were subdividing their large homes into apartments, and among "oil people" who had rented homes in Salem. Neither of these, she declared, wanted too much cash tied up in refrigeration—so the specials were a "natural" for them, and sold without any great amount of trying.

When oil people move from one field to another, she said, they generally dispose of everything they can, figuring to travel light and pick up furnishings for their next home in whatever town they happen to move to next. So a low-priced refrigerator that could be disposed of easily, without too much loss, was right up their alley.

The dealership doesn't handle trade-ins of mechanical refrigerators at all—it convinces owners that they'll be able to sell their own units at much higher prices than they'd bring on a trade-in deal, and so dodges what has so far proved to be a non-profit operation. Friends of previous owners buy most of the used models, with oil field people being other good prospects.

Here's One Way To Make 'Em 'Sell Up'

How to keep sales of special models from piling up into any considerable volume has apparently been solved by Gus Morgan, manager of Radio & Electrical Appliance Doctors, Frigidaire dealership in Salem.

In the first place, he pays his salesmen only 5% commission on sales of specials—just half of their regular commission on higher-priced models. If the sale is very tough, the salesman may play up the special on the theory that a \$5 bill in his pocket is better than an order to somebody else—but in general, he'll work like thunder for that extra 5% on another model.

And secondly, Mr. Morgan himself tells prospects frankly that as far as he's concerned there's not enough profit for him in a special to have him even try to sell one—that they can buy one, if they want to, but that both he and the customer will be happier with a higher-priced model, in the long run. After a while, he says, customers begin to believe him—and they buy the better boxes.

Sales this year so far are at least three times what they were at the same time in 1939, Mr. Morgan reports—and specials have been a very small part of total volume. Not that he couldn't sell them, if he wanted to—but he started, early in the year, to "nail 'em to the floor" and it worked, so he's not figuring to change, now.

Have this year's lower prices cut down chiseling, especially on the part of the buyers? Not so you could notice it, Mr. Morgan says. National advertising of price has made prospects more price-conscious than ever, and they'll shop every dealer in town, if they can, to get the "best buy."

Best way to deal with the chiseling type of buyer, Mr. Morgan has found, is to make him ashamed of himself. When a prospect is particularly hard to sell at the list price, Mr. Morgan uses tactics something like this:

"Sure, you can have 10% off, if it's all right with the salesman. Of course, that's the profit he'd ordinarily earn, and he'll be making the sale just for practice . . . but if you want it . . ."

That usually stops 'em, he declares. They wouldn't work for nothing themselves, and the idea of their taking the profit away from a fellow-worker doesn't set so well. So they'll settle for list price, and feel better about it.

Mr. Morgan is apparently a man who likes to experiment, for he said he's had in mind for some time to try out this scheme:

Employ no salesmen, and offer all appliances at 10% off—giving the

customer what the salesman ordinarily would earn. Of course, there'd be nobody to hunt up prospects, or call on them in their homes; they'd all have to be drawn into the store by the "10% off" teaser. No, he's not actually going to try it out . . . but it's an intriguing thought.

Trade-ins haven't been a problem, because, in common with other local dealers, the store doesn't accept them. Owners can easily sell their used models to acquaintances, or through classified advertisements in the local weeklies, he says, and get more for them than he could allow. There's no servicing grief for him on these sales, either, for the unit is sold "as is"—and he's in the clear if anything goes wrong.

Biggest salesman problem, says Mr. Morgan, is closing. He still has to do most of it, he declares . . . and he's the guy who has to say "no" when price-cutting puts in its inevitable appearance. He had sold 15 units in the last week, he said, to floor customers—who are the hardest to sell "because the shopper is always the biggest bargain-hunter of the bunch."

The store has the Philco-York window cooler this year, and sales prospects look good to Mr. Morgan, as soon as the town gets a stretch of hot weather, which has been scarce during spring and early summer. The store will concentrate

on residential and private office jobs only, leaving store cooling and larger jobs alone for the present.

Bachman's Banks on Location, Reputation

With deluxe models going as well or better than the low-priced leaders, Bachman Bros., Salem's General Electric dealership, reported volume equal to last year, and sales far above their 1939 unit mark.

An old, established furniture dealership, Bachman Bros. employs no outside salesmen, and gets most of its business from persons who have been customers of the store for years, or who buy a refrigerator as part of the equipment for a home.

In a town the size of Salem, Mr. Bachman said, a store's location and reputation are the best assets it can have—better than any amount of advertising. Bachman's is on the town's main street—one of the town's movie houses is nearby—and people pass by and shop.

Outside salesmen, in such a situation, are not necessary, Mr. Bachman believes. Besides, on an item as expensive as an electric refrigerator or range, people have pretty well made up their minds what they want before a salesman ever gets a chance to talk to them.

Besides its location and community reputation, one other factor has influenced a lot of refrigerator—and furniture—sales, Mr. Bachman declares. The store carries all its own time-payment paper—the Bachmans, in fact, operate a local finance company—and so payments can be arranged individually to suit almost every buyer's requirements.

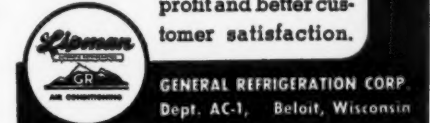
Importance of this as a goodwill builder can't be overemphasized, says Mr. Bachman. If the buyer happens to run into a siege of bad luck, he can come in and talk it over and get an extension of his contract without a lot of red tape. On time payments, as well as other things, a person would just rather do business with somebody he knows.

Also, time buyers come into the store regularly to make their payments, and so inside salesmen get repeated chances at them as prospects for new merchandise.

The "no trade-ins" on mechanical refrigerators policy also applies at Bachman's . . . in fact, the store appears to just about set the pace for appliance sales policy in Salem, other dealers evidently figuring that if Bachman's won't do it, we don't have to do it, either.



More than 20 years of high reputation . . . in every kind of refrigeration service . . . has established the name "GR-LIPMAN" as a BUY word that breaks down sales resistance. Make this reputation your sales asset . . . for greater profit and better customer satisfaction.



YORK SELECTS THIS

Hydraulic-Action CONTROL

We have adopted this size and type of thermostat as part of our standard equipment in connection with our Reach-In-Refrigerators equipped with York Filtemp Refrigeration system.

IT HAS ALL OF THESE FEATURES:

- BROAD TEMPERATURE RANGE
FROM -20° TO +50° F.
- SOLID LIQUID CHARGE
POSITIVE ACTION OVER ENTIRE RANGE.
- OPERATES ACCURATELY IN ANY POSITION
AND WITH CONTROL ABOVE OR BELOW BULB.
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AT SWITCH OR CAPILLARY LOCATION.

These exclusive features are incorporated in control Type 1609 (pictured at the right) for dry or wet box applications. Differential adjustable from 3° to 25°. White-Rodgers Hydraulic-Action Controls can solve your refrigeration problems!

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Controls for Refrigeration • Heating • Air Conditioning

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Type 1609

Write today for Complete Catalog

Control Methods For Flooded Evaporators

3. Thermo Valve Refrigerant Flow Control

How This Method Works Best In Flooded Systems

Editor's Note: This is the third and concluding part of an article by Mr. Dube describing various methods of refrigerant control for flooded refrigeration systems, and the proper application of each method.

By J. E. Dube, Alco Valve Co.

Thermo Valve

Thermo valves have been used extensively and very successfully in the control of flooded evaporators. Although these valves are responsive only to pressure and temperature, they maintain indirect yet very positive control over the liquid level within the evaporator.

This statement can best be supported by a brief analysis of the operation of the valve.

Thermo valves, which are actually superheat regulators, control the amount of superheat of the gaseous refrigerant leaving the evaporator. A vapor is said to be superheated

whenever its temperature is higher than the saturation temperature (boiling point) for that particular pressure. In the presence of liquid, it is impossible to raise the temperature of vapor above the saturation temperature since all heat input is absorbed by latent heat, thus converting more liquid into saturated vapor. This phenomenon is the reason why water at standard atmospheric pressure cannot be heated above 212° F. After all liquid has been vaporized, however, the temperature of the remaining saturated vapor can be raised by further heating, thus creating superheated vapor. The amount of super-

heat is, of course, the temperature increase above the temperature of saturation at the existing pressure.

There are three main forces governing the operation of a thermo valve. One force, namely, the one exerted on top of the diaphragm by the thermostatic charge, tends to open the valve.

HOW VALVE OPERATES

Since the temperature responsive bulb of the thermo valve is applied at the evaporator outlet, this opening force is proportional to the temperature at that point. The valve will open wider with increasing bulb temperature and vice versa.

The other two operating forces augment each other in a closing direction. One force is exerted by the valve spring and the other is created by the evaporator pressure acting underneath the diaphragm. The valve mechanism is in equilibrium when the opening force equals the sum of the two closing forces. Obviously, in order to satisfy this condition, the pressure of the thermostatic charge must exceed the suction pressure by the amount of the spring pressure.

The bulb of the thermostatic element, charged with the same refrigerant as is used in the system, and the evaporator outlet are at the same temperature. The pressure within the bulb, however, must be greater than that within the evaporator in order to permit opening of the valve.

We know that the higher pressure, namely the one within the thermostatic system of the valve, is the true vapor pressure of a saturated vapor because ample refrigerant has been provided insuring the presence of liquid within the bulb under all operating conditions.

The only possible way to obtain a lower vapor pressure at the same temperature, as is the case within the evaporator outlet, is to have superheated instead of saturated vapor present in this part of the system.

IN A FLOODED SYSTEM

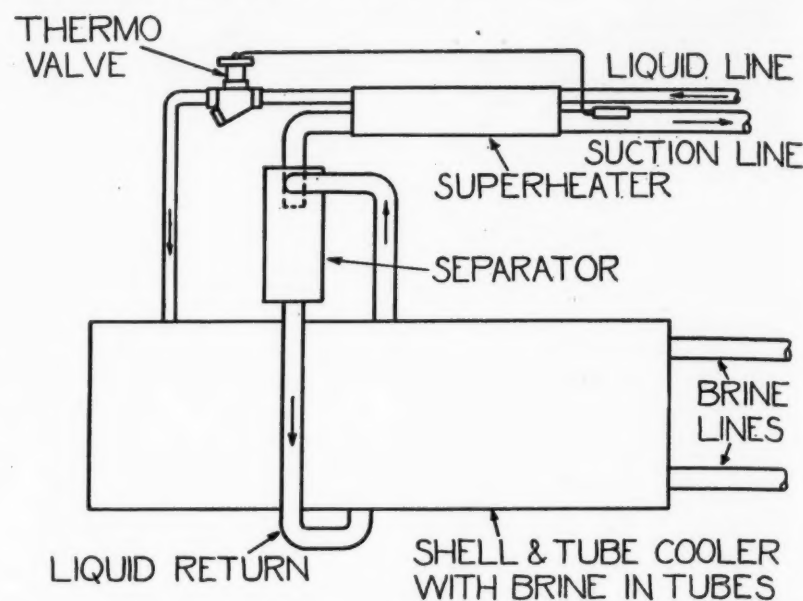
Let us now consider a flooded evaporator controlled by a thermo valve. Most of the evaporator is filled with liquid refrigerant and obviously in this flooded portion we will find only saturated vapor.

Between the flooded portion and the evaporator outlet, however, the saturated vapor will absorb additional heat thus adding sufficient superheat to actuate the thermo valve. A certain portion of heat transfer surface is required to permit this additional heating up of the vapor and the spring tension or superheat setting of the thermo valve will govern the amount of surface necessary for this process.

The higher the superheat setting the more superheating surface will be required and consequently the liquid level within the evaporator will be lower. Obviously, the reverse is true at lower superheat settings and thus it can readily be seen how the thermo valve indirectly controls the liquid level within the evaporator.

Probably the most common type of flooded evaporator to be controlled by a thermo valve is the bottom-fed

Fig. 4—Hookup With Shell-and-Tube Cooler



Thermo valve in combination with separator and external heat exchanger is often used with this kind of refrigeration system.

or wet expansion coil. For best operation, great care should be taken to keep the refrigerant velocity and pressure drop within the coil to a minimum.

LOAD PER CIRCUIT

This means that for a given tube diameter, the load per circuit should be less than with a dry expansion coil. By following this rule, we make it possible for the liquid level within the various circuits to be determined by gravity and not by the static head within each circuit. The liquid distribution will then automatically take care of itself in accord with the evaporative demand within each circuit.

When high levels must be carried within the coils, it sometimes becomes necessary to provide baffles within the suction header or even special surge drums and liquid separators.

When there is a tendency toward flooding back by slugging particles of liquid refrigerant past the thermo valve bulb, it may be advisable to relocate the bulb and provide considerable space between suction header and remote bulb thus permitting thorough mixing of liquid slugs and suction gas.

The thermo valve in combination with separator and external heat exchanger, as illustrated in Fig. 4, has found extensive use in the control of flooded evaporators and particularly shell-and-tube coolers.

KEEPS LIQUID HIGH

With this control arrangement, the highest possible liquid levels, so important for high capacity and proper oil return, may be carried successfully.

Inasmuch as the liquid level within the evaporator is determined by the amount of surface required to pick up the thermo valve actuating superheat, it can readily be seen that the level will also depend on the amount of surface of the external heat exchanger or superheater.

This heat exchanger should be large enough to do all of the super-

heating so that the evaporator surface will be used exclusively for latent heat transfer. The separator will catch any liquid which might carry over into the suction line and return it to the evaporator.

The flooded evaporator, adequately equipped with proper controls, fills a very definite need for refrigerating systems where the highest possible heat transfer factors are dictated by evaporator space limitations or unusual cost of low side surface.

When considering the entire system, however, we find ourselves confronted with extra surge drums, large receivers, larger quantities of refrigerant, and the need of skillful engineering to insure high efficiency, adequate controllability, and proper oil return. All these factors should be carefully analyzed when making the choice between dry or flooded evaporators.

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Masterbuilt HyDroLoc

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Our NEW SAFT-LOC line is made in 18 different sizes.

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on our full line of lockers. We have one that will fit your requirements in every respect.

Our complete line of Masterbuilt Food Storage Lockers are endorsed by distributors of refrigeration and insulation and sold only thru them.

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You Offer All These Advantages with CURTIS PACKAGED Air Conditioners

The complete Curtis line of Packaged Air Conditioning Units includes 5 sizes from 3 to 15 tons capacity. With this line you can meet the requirements of practically every class of retail establishment; offices, stores,

restaurants, institutions, etc.

In addition, Curtis Packaged Units offer you and your customers all these important advantages—all sound, attractive sales points that mean increased sales and profits for you:

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CURTIS REFRIGERATING MACHINE CO.

Division of Curtis Manufacturing Co.

1912 Kienlen Ave.

St. Louis, Missouri

Putting the 'Frigid-Eye' Analyzer To Work on Every-Day Service Calls

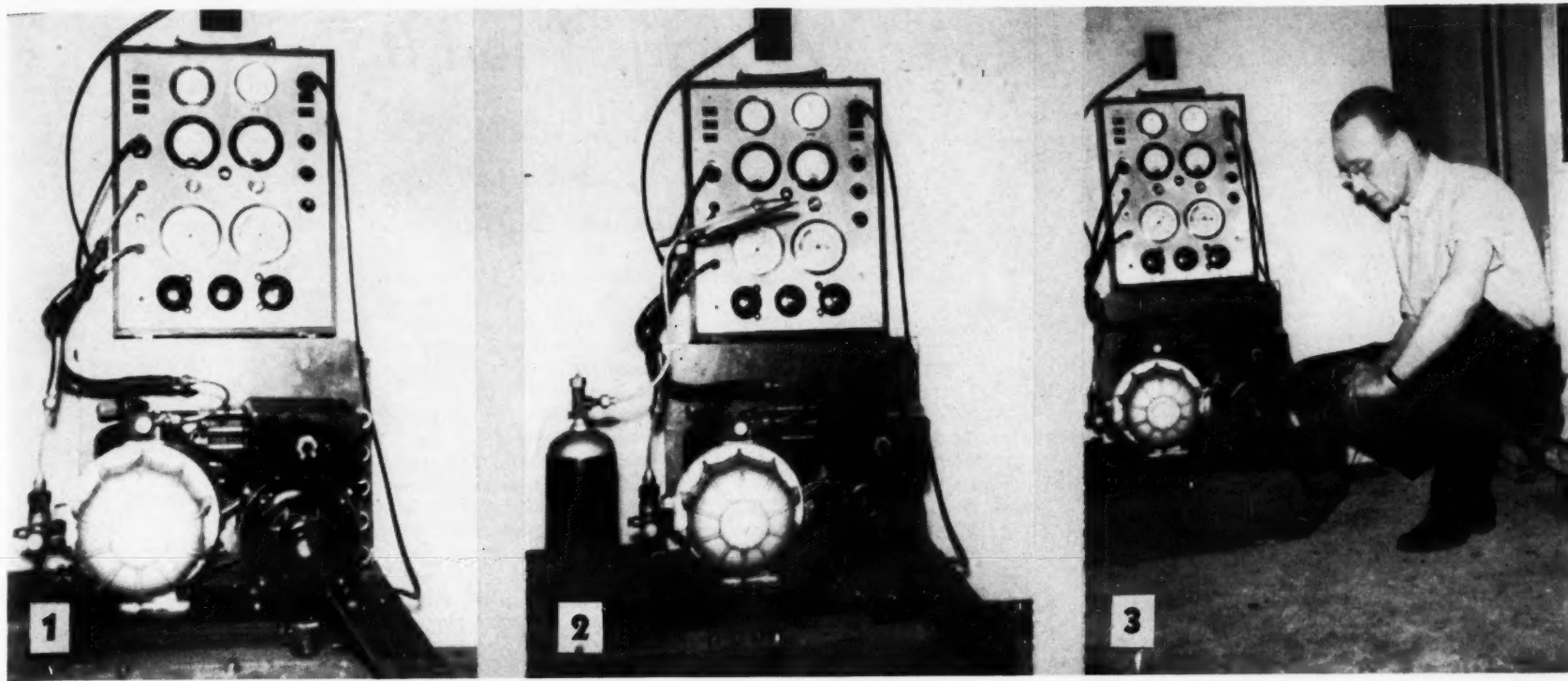


Fig. 1 shows the "Frigid-Eye" service analyzer hooked up to test for mechanical and electrical defects of the unit. Fig. 2 shows the hook-up used in charging the system with refrigerant. Fig. 3 shows S. A. Hemmerly, designer of the device, making a test on a motor capacitor. Detailed explanation of the different hook-ups will be found in the accompanying story.

Service Analyzer Plays 'Doctor' In Diagnosing Common Refrigeration Ills

Editor's Note: In answer to numerous requests from readers for further information on the "Frigid-Eye" service analyzer designed by S. A. Hemmerly, Scranton, Pa. service man, this picture story of the device explains in detail how the analyzer is used on typical service calls. First account of the analyzer appeared in the Oct. 11, 1939 issue. A later article, published in the Jan. 10, 1940 issue, contained Mr. Hemmerly's explanation of how the device is operated in refrigeration service work.

By Robert M. Price

SCRANTON, Pa.—Because many service men have requested further information on the "Frigid-Eye" service analyzer designed by S. A. Hemmerly, Scranton Norge Service, Mr. Hemmerly hit upon the idea of showing the analyzer in action by using pictures revealing the device in use on typical repair calls.

Since the first publication of information on the service analyzer was published in the NEWS, inquiries have poured in to Mr. Hemmerly from many sections of this country, in addition to some from Portuguese East Africa, Bogata, Columbia, and Puerto Rico. One letter brought a request for a price on the device in quantities of 100 to 500.

Pictures of the analyzer in action show methods of testing for electrical and mechanical defects, charging the system, and continuity checks for motors, starting capacitors, and controls.

MECHANICAL TESTS

Fig. 1 shows the hook-up for testing mechanical and electrical defects of the unit. For testing electrical defects, the service man sets up the analyzer, removes the a.c. cord that is connected to the refrigerator, and plugs it into the top a.c. outlet on the right side of the panel board. The top switch on the left side of the panel controlling the outlet is thrown. The refrigerator motor should run if both motor and control are in working order.

The two switches on the left side of the panel which control the voltmeter and ammeter are then thrown. If signs of high voltage or high amperage are noted, the service man has indications that the trouble may

be in blocked condenser, high head pressure, or blockage in the system. The thermometer and humidimeter at the top left of the panel show the room conditions under which the refrigerator is operating.

Also shown in Fig. 1 is the hook-up to detect mechanical troubles. The flexible hose at the left is connected to the port on the head side and to the top connecting port on the left side of the panel. Another flexible hose is shown connected to the suction side or valve and leads to the lower connecting port.

The reading on the compound gauge at the lower right is checked for low vacuum indicating a blockage in the system. Head pressure readings are taken on the pressure gauge at the lower left. If a high head pressure is indicated on this gauge,

it may be that the seal is leaking on the low side, or in the case of rotary type compressor it may be drawing in air on its low side, or the unit may have too heavy a refrigerant charge.

Fig. 2 shows the hook-up used in charging a system with refrigerant.

A flexible hose is shown connected to both head and suction valves of the unit leading to the head and suction ports on the left side of the panel. The hose from the refrigerant drum at the left of the picture is connected to the center connecting port at the left of the panel. If

the refrigerant is to be put in through the suction side, the valve is opened on the right side of the manifold at the bottom left.

The refrigerant being added can be seen in the liquid indicator on the right over the compound gauge. In charging through the head valve the flow is recorded on the liquid indicator on the top left side of the pressure gauge. Valve on the left of the manifold controls the head charging and purging. Oil is added to the system in the same manner and the system is discharged with the use of manifold valves.

Fig. 3 shows Mr. Hemmerly making a test on a motor starting capacitor. A set of leads is plugged into the lower outlet on the right side of the panel board. A yellow light on the panel gives the continuity check. The circuit can be tested by using test leads with the cap end plugged into the wall outlet and holding both lead prongs at a.c. input connection. A red light on the panel indicates the current is in the meter or on the panel.

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Success of Prominent Refrigerator Reconditioner



REBUILDING traded-in refrigerators at Associated Refrigerator's Philadelphia plant. This company uses Texaco Capella Oil exclusively.

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Telephone: MARCLIFF 3-660-3-661

January 11, 1940

The Texas Company
10th & Chelton Avenue
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Attention: Mr. George W. Larer

Gentlemen:

Please be advised that we have made use of your dry Capella Oil in our affiliate New York organization as well as here in our plant in Philadelphia.

Both our New York office and our Philadelphia office have been approached innumerable times by many oil companies and we have given each type of oil a fair trial.

We say without hesitation that we find Texaco Capella Oil to be the finest for refrigeration work.

As the largest reconditioning agency in this country it is important that we rebuild trade-in refrigerators properly. To date our reputation for rebuilding is of the best and we feel sure that the use of Texaco oil has done much to contribute to this reputation.

Very truly yours,
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RECONDITIONING, exactly like new, 100 electric refrigerators a week, Associated Refrigerator Plant is showing the industry a market for its traded-in merchandise.

To assure that these reconditioned boxes will operate, as well as look, like new, Associated refills the units with Texaco Capella Oil.

Read President Asch's letter.

You, too, should use and sell Texaco Capella Oils. For prompt Texaco service, phone the nearest of more than 2300 warehousing points, or write:

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Texaco Dealers invite you to tune in The Texaco Star Theatre—starring Kenny Baker and Frances Langford—Every Wednesday Night—Columbia Network—9:00 E.D.T., 8:00 E.S.T., 8:00 C.D.T., 7:00 C.S.T., 6:00 M.S.T., 5:00 P.S.T.

TEXACO'S LATEST CAPELLA OIL LUBRICATION GUIDE. Lists all popular electric refrigeration and air conditioning units; their refrigerant and the Capella Oil to use with each. Write for your copy today.



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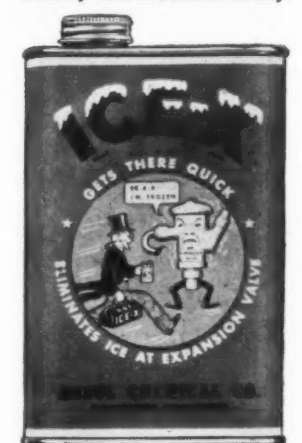
ICE-X

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Ansul Ice-X is the doctor that gives frozen units immediate relief. It ends ice trouble.*

Ice-X is hazard-free, safe, easy to use, fully machine tested.

NEW HALF-PINT SIZE—A new smaller size, handy for the service man, in addition to pints, quarts, and gallons. Order a can from your nearby Ansul Jobber today.



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ANSUL ICE-X is equally effective with methyl chloride, acrolein methyl chloride, methylene chloride, and all "Freon" refrigerants. It will not react with refrigerants or oil. It leaves no residue. It will not corrode.

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25th Anniversary Year... 1915-1940*

TEXACO Capella Oils

Dealers and Clubwomen Stage Cooking School

FAIRMONT, N. C.—Four local appliance dealers—Newberry & Bryant, Kelvinator; Fairmont Drug Co., G-E; Floyd Electric Co., Westinghouse; and P. R. Floyd, Universal—participated in the spring cooking school conducted recently by the Woman's Club of Fairmont.

The school was held in the town's high school building under the direction of Miss Margaret Moore, home economist of Carolina Power & Light Co.

★★★★★★★★



Mills Condensing Units
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YOU CAN'T MATCH MILLER

Replacement Door Gaskets for Design and Quality

★ The reason is simple. Miller has been the electrical refrigeration industry's primary source of supply for door gaskets for almost 20 years. Every major improvement made in this product during this period has been pioneered by Miller engineers. That means every Miller replacement door gasket duplicates the "original" both as to design and quality. All are made

from the same dies—of the same wear and age-resisting rubber compounds.

You can solicit the cream of this replacement business with the Miller line, too, because its 34 different types enable you to service 80% of all refrigerators regardless of make. Get the facts now! Write for price list and dimensional drawings.

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THAT'S WHY HUNDREDS
OF MANUFACTURERS
USE THEM!

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CAN HELP YOU SELL YOUR EQUIPMENT

Stokers, refrigerators, and air conditioning equipment powered by Wagner motors, continue to give faithful, reliable, efficient service year after year. This record of Wagner motor performance increases the sales possibilities of these appliances through increased confidence of users and dealers—an added sales feature that you cannot afford to overlook.

Alert dealers, realizing the value of this user acceptance, are quick to tell their prospective customer that the appliance in question is equipped with a Wagner motor. The complete confidence which users place in Wagner motors helps the dealer sell Wagner-motored appliances.

The dependable performance and long life of Wagner motors helps the manufacturer of the appliance build up a desirable reputation for his product.

Send for bulletins MU177 and MU182 containing complete technical data on Wagner motors. Wagner maintains 25 sales and service branches conveniently located throughout the country. Trained sales-engineers are always ready to assist you in selecting the exact motor for your equipment.

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Please send me FREE bulletins MU177 and MU182.

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MOTORS • TRANSFORMERS • FANS • BRAKES

Make Your Walk-In Cooler A 'Look-In' Too, Advises One Meat Dealer Who Has Tried It



(Above) From the street, the Stapleton "look-in" cooler appears like this. Well lighted at night, it does a 24-hour-a-day selling job.

Bob Stapleton's Sales Have Doubled Since He Let Folks 'Peek Behind the Scenes'

BIRMINGHAM, Ala.—"Why buy several hundred dollars worth of meat and then hide it in a cooler?" asks Bob Stapleton, proprietor of the meat department in the Waite Dairy Store, Inc. here.

And well might Mr. Stapleton be puzzled by such tactics, for he himself has made every effort to make his walk-in cooler a "look-in" cooler as well. And what's more, he declares that this extra effort toward display has doubled or perhaps even tripled his sales.

One of the first meat merchandisers in the country to realize the full value of a cooler of this type, Mr. Stapleton installed his first "look-in walk-in" some two years ago. It was a 6 x 16-foot Fogel case with one large display window in front and another on the end.

This cooler immediately attracted considerable attention. Mr. Staple-



(Above) Here is how the same cooler looks from inside the market. (That's Bob Stapleton himself waiting on the customer.) Note that the display case in the foreground is built low enough so as not to block the view into the walk-in cooler behind it. Another unique Stapleton touch are the stools on which customers may perch while waiting for their order to be prepared.

ton found that women customers, especially, liked to "peek behind the scenes." In fact, so interested did some of them become that he took them inside to show them "the works."

Only drawback to the new cooler was that customers had to first come into the store before they could see the meat display. Realizing that even more widespread attention would be attracted if the display could be seen from the street, Mr. Stapleton moved the cooler to the front of the store so that the display window in the end of the case was right against the plate glass front of the store itself.

This display now works 24 hours a day, for it is brightly lighted at night. And the look-in cooler worked so well with meats that Mr. Stapleton extended this case, by addition of similar units, right back to the rear of the store. This added space he uses for display fresh produce.

Separated from these large coolers only by working space is a long floor display case which also extends nearly the full length of the store. This case is only 43 inches high, and so does not block the customers' view into the display windows of the walk-in cooler behind it. Ranged in front of this display case are a number of movable stools to add to customer comfort.

Air Circulator Steals Show At G-E Meeting

ST. LOUIS—An intensive discussion of the new General Electric air circulator featured the sales meeting held here recently by James & Co., G-E distributor in this territory, for 65 of its commercial refrigeration dealers.

Among G-E officials who addressed the meeting were Charles Rowland, western district manager for the commercial refrigeration division; George Stafford, factory representative from Bloomfield, N. J.; and Dewey Dollinson, also from the Bloomfield factory.

Henry Wels, Jr., commercial manager for James & Co., was in charge.

Moths 'Frozen Stiff' In Store's Fur Vault

MUSKOGEE, Okla.—Positive moth killing with refrigeration in fur storage vaults has been reported by W. W. Durnil of Durnil's Department Stores here.

Destruction of both moths and moth eggs is accomplished by lowering the temperature in the vaults to 15° above zero at regular intervals. During this period, moth eggs are frozen and, when temperature is returned to 40 or 50°, the eggs break, killing moth eggs or larvae.

Sharp freezing refrigeration is provided by a two-speed compressor which normally keeps the temperature at 35° F. when operated by a 2½-hp. motor.

"Once each month, and more frequently when coats are coming into the vault, we operate the compressor on a 5-hp. motor which lowers the temperature to 15° above zero," Mr. Durnil said. "This sharp-freeze feature has proved most valuable and satisfactory, and we believe it to be one of the outstanding points about the vault."

Fur pelts are kept soft by holding relative humidity at 65%. This prevents the natural animal oils from drying out of the skins.

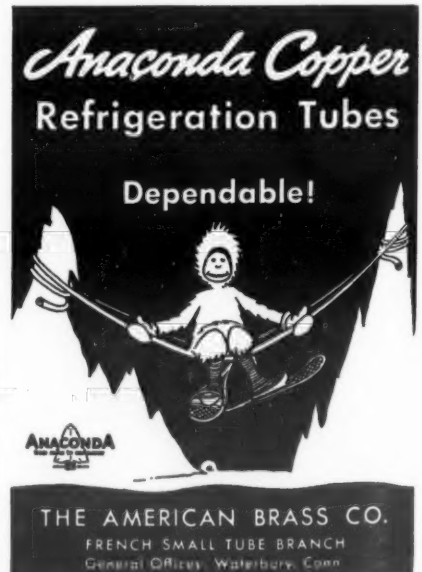
The vault, complete with fur repair shop equipment, was installed at a cost between \$7,000 and \$8,000. It is situated in the basement of the department store and is 30 feet square with a 9-foot ceiling. Storage capacity of the vault is approximately 3,000 coats.

Walls, floor, and ceiling were insulated with 4 inches of corkboard and a new concrete floor was poured over the corkboard insulation.

The storage room is equipped with a vault-type safety door with a combination lock and has an entrance way, with a second refrigeration-type door, which reduces infiltration, as one door is always closed.

Illinois Service Men Plan Outing At Starved Rock

AURORA, Ill.—The Illinois Association of Refrigeration Service Engineers is planning a picnic at Starved Rock on July 28. Highlight of this outing will be an inter-chapter baseball contest.



A simple, efficient tool for hard pulling jobs such as flywheels, fans and pulleys—universal for all make refrigerators. Rotating arms grip in any position—internal or external pulley—odd and even spoked wheels. Hex head power screw has narrow band to facilitate hand turning. Made of special steel, hardened and tempered. Fully guaranteed. Sold by mill supply and refrigeration jobbers.

J. H. WILLIAMS & CO.
225 Lafayette St., New York, N. Y.



Fine Workmanship on Department Store System Shows Today's Trend In Air Conditioning

By Henry Knowlton

DEARBORN, Mich.—"All materials used shall be the best for the purpose and workmanship shall be of the highest order." This phrase, hopefully written into mechanical specifications for many years, assumes new meaning with the advance of technical skill in air conditioning installations. What it can mean in the finished product is demonstrated by a 125-ton system recently installed in the local branch of Peoples Outfitting Co. here.

The installation was made by J. Brodie & Son, contractor, of Detroit, according to specifications written by Albert Kahn, Inc., architect. Refrigeration equipment and piping was furnished by Atmospheric Control Co., Carrier distributor.

SERVES TWO FLOORS

First two floors of the department store are served by the air conditioning system. Air introduced by Waterloo registers is supplied to the large selling space on each floor, and to all offices of the company. During the spring and fall the system may be used for ventilation only.

All apparatus is concentrated in one small section of the third floor. One Sturtevant fan, handling 56,000 c.f.m. and powered by a 20-hp. Howell motor, is used to supply fresh air and recirculate air through the cooling coils. A second fan, having 40,000 c.f.m. capacity, may be used to recirculate air, or exhaust air from the system. During mild weather the No. 2 fan is used alone.

Fresh or recirculated air moving through the conditioning system is first cleaned by a bank of Kompak filters, constructed of fire resistant cellulose stretched on wire frames. Built by American Air Filter Co., the filter section may be removed

and recovered by a special machine at regular intervals.

After filtering, the air passes through a bank of direct expansion finned coils. Eight Sporlan expansion valves introduce refrigerant to these coils, which are mounted four banks high. After passing through the cooling coils, the air is drawn through eliminator plates, which prevent drops of moisture from passing into the system.

Refrigeration is supplied to the coils by a 125-ton Carrier V-8 compressor, mounted on a concrete foundation. This unit is operated by a 125-hp. motor with V-belt drive. That vibration is no longer a problem in upper floor mounting of air conditioning compressors is demonstrated by the fact that this unit operates on the third floor of the store without transmitting noise to the balance of the loft building.

COOLING TOWER USED

Hot, compressed gas is piped from the compressor to a Carrier fin-type shell-and-tube condenser, mounted on the floor near the condensing unit. Water for cooling and condensing the gas is supplied by a Lillie-Hoffman cooling tower, located on the roof of the building.

Sprays in this tower, which is of the natural draft type, are served by a 10-hp. pump, located near the condenser on the third floor of the building. As the system operates water in the shell-and-tube condenser is cooled by recirculation through the tower. Make-up water is supplied by a float valve at the base of the tower.

Control of the system is manual, in the sense that the essential parts of the system are started and stopped by Edward Hartwig, engi-

neer in charge, or his assistant, Paul Rickett. Dampers controlling the supply, exhaust, and recirculated air are operated by a Powers Regulator Co. compressed air system. To open or close large banks of dampers, the engineer simply turns a small dial on the wall.

The entire installation is characterized by neatness and first-class workmanship. All coils, filters, eliminator plates, and fan No. 1 are enclosed in a large sheet metal housing, equipped with double access doors. Engineers in charge of operation can walk back and forth between the air intake and the filters, and between the filters and coils. Other doors lead to the fan room, immediately back of the eliminator plates.

INSULATED DUCTWORK

Copper "Freon" lines are installed with precision, and suction lines covered. All ductwork is insulated with 2-inch felt, covered with canvas and painted. The concrete compressor mounting is well finished and is painted to match surroundings. Water piping going to the cooling tower is well supported.

Progress in air conditioning is being marked by improvement in the quality of installation work, as well as in design and application of equipment. More progress will be made by skilled mechanics working under careful supervision.

Self-Contained Units Lead N.Y.C. Sales

NEW YORK CITY—Three hundred and eighty-five installations of air conditioning equipment were reported by distributors and dealers in the New York metropolitan area during the first five months of this year, according to statistics compiled by Consolidated Edison Co.

Included in the five months' total were 343 self-contained units, of which 223 were of 1½-hp. capacity or less and 120 of 2-hp. size or larger.

Total horsepower capacity of installations in the New York area through May was 10,510.61, with self-contained units accounting for 732.18 of this amount.

Manhattan led in installations, with 298, with Brooklyn second with 43, Queens third with 27, and the Bronx trailing with 17.

Following is a classified tabulation of installations on Consolidated Edison lines through May:

Residential	28
Banks	2
Beauty and Barber Shops	5
Clubs	3
Hospital Laboratories	2
Hotel Guest Rooms	5
Hotel Public Rooms	2
Office Buildings	5
Doctors' Offices	12
Private Offices	59
Public Building	1
Restaurants	74
Showrooms	21
Department Stores	8
Retail Stores	51
Theaters	12
Funeral Parlors	4
World's Fair	7
Miscellaneous Commercial	3
Miscellaneous	57
Brewery	1
Candy Manufacturing	5
Fur Storage	8
Laboratories	2
Meat Packing	1
Photo Processing	1
Warehouse	1
Instrument Manufacturing	1
Miscellaneous	1
Total	385

Steam Turbine Powers Giant System

PAINESVILLE, Ohio — Because air conditioning is indispensable in maintaining proper temperatures and humidities in various stages of rayon manufacture, a 1,000-ton system has recently been installed in the plant of the Industrial Rayon Corp. here.

Using steam as motive power, the new system utilizes a York-Allis Chalmers turbo-compressor, in combination with a brine cooling system. The refrigerant is "Freon-11."

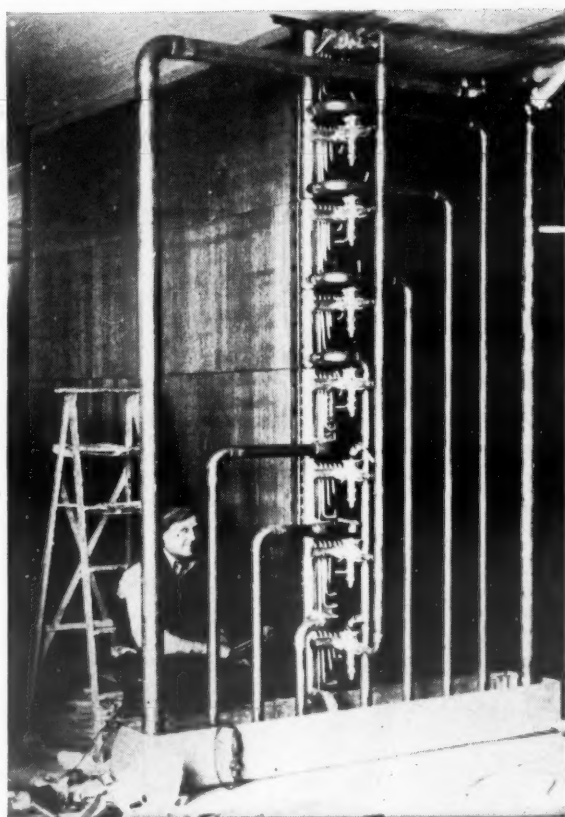
The equipment operates on exhaust steam from generating turbines, thus

allowing the generated electric power to be used elsewhere in the building. In operation, the equipment will cool 2,600 gallons of brine per minute to 40° F., and will be interconnected with the present system.

Four thousand gallons of condensing water per minute will be obtained from Lake Erie.

Rayon yarn manufactured in the new \$11,500,000 plant will move continuously forward, through cleaning baths, processing liquids, and over drying reels, protected at all times by proper temperature.

'Freon' Headers To Coils



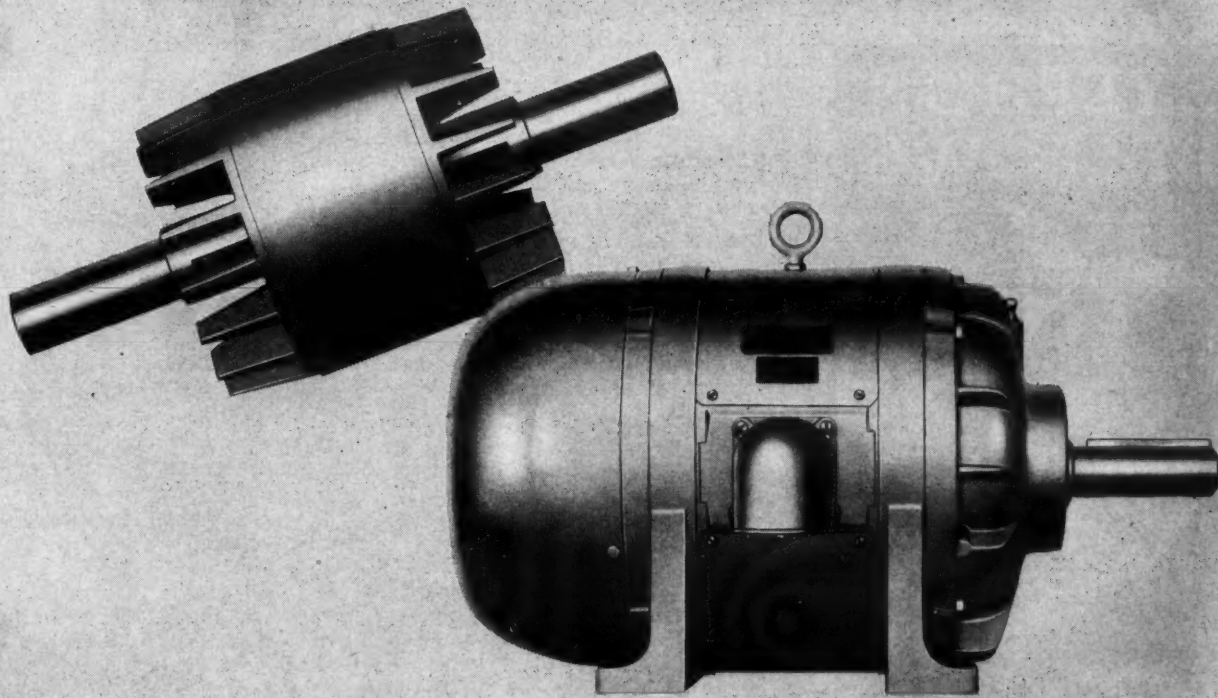
Atmospheric Control Co. assembled this 'Freon' header which supplies liquid pumped from the compressor to the eight expansion valves shown. This arrangement is said to provide an even flow of liquid to all coils. Note sheet metal drain pan at bottom, provided to catch moisture which may condense on liquid pipes.

Easy Access To Filters and Dampers



Paul Rickett, assistant engineer at People's Outfitting Co., Dearborn, Mich. store, says it is easy to service filters installed in a vertical bank at the left of this picture. Mr. Rickett has his hand on one of the large mechanisms used to control dampers by means of compressed air. Recirculating air dampers form the wall in the background.

SMOOTH POWER



TO COOL A REFRIGERATOR ... OR A DEPARTMENT STORE

All cooling problems—whether they deal with six cubic feet or 6000—are eventually reduced to terms of power. Then it is a question of how smoothly, how capably, and how economically the motor you select provides that power.

Delco motors represent an excellent choice for refrigerators, refrigerating units, and air-conditioning installations. From 1/8-h.p. through 3/4-h.p. for sealed units, to 50-h.p.

power plants for commercial applications, all Delco motors are dynamically balanced for quiet, vibration-free operation . . . all are precision-built by the most modern manufacturing methods—carefully tested to assure lasting satisfaction.

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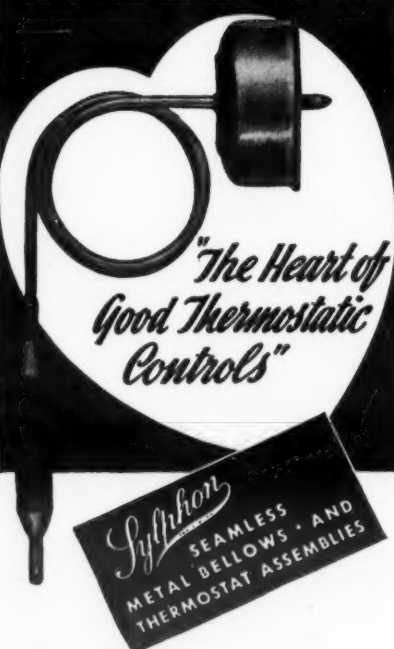
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Let us tell you more about these remarkably durable, seamless, jointless, all-metal Bellows that are the result of more than 35 years research and development. Ask for Bulletin NO-511.

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Here Is the First Article of a Series On the Application and Servicing of Low Temperature Retail Equipment

Editor's Note: This is the first of a contemplated series of articles on application and servicing of a certain class of refrigeration equipment used by merchants—generally called "low temperature" equipment and comprising ice cream counter freezers, retail ice cream cabinets, and frozen foods cabinets.

First part of the series will be devoted to ice cream counter freezers, which are used to manufacture ice cream on the premises where the ice cream is sold. Says the author in explaining why he approaches the subject as he does:

"What are the problems regarding the use of ice cream freezers? The main problem, from the user's standpoint, is not refrigeration. He is worried about how to make ice cream.

"How would you know if the freezing time of an ice cream freezer is too long? Suppose the job was not short of gas; suppose the operating back pressures were correct and the freezing time still too long. Could you account for it?"

By Arch Black

Probably there is no piece of mechanically refrigerated equipment that requires the service engineer to know so much about its purpose and function as the ice cream counter freezer.

In this series of articles it is intended to describe various types of freezers, outlining the method of refrigeration and the general information that will be essential to the service engineer in order that he be able to install, service, and operate any counter freezer of the common type.

When the service engineer is rendering service on a counter freezer, he may oftentimes find that the problem facing him will not be one of refrigeration. On some occasions, after making a check of the refrigerating system in general, everything may be found to be in absolutely perfect working order.

If such is the case, the service man must look elsewhere for the possible cause of the trouble. Unless he knows how to operate a freezer, he will be of little value to the user whose main problem is how to make ice cream at a profit.

Therefore, if the service engineer is to be a specialist to whom the owner of the counter freezer will look for advice and operating aid, he must have a clear understanding of how to make ice cream from the counter freezer and be fully acquainted with the terms as are used by those in this business, and in addition have a reasonable knowledge of ice cream.

GROWTH OF COUNTER FREEZER

In manufacturing ice cream, freezing was first done in the hand-power tub of salt and ice, then power was applied to machines of the same type. Following this, brine freezers were developed, and finally direct-expansion freezers using ammonia as the refrigerant were used.

In commercial plants the ice cream freezer can be classified into two groups, namely the batch freezer and the continuous freezer. The batch freezer freezes a definite quantity at one operation before it is emptied and refilled again, for the next batch. The continuous freezer operates with a continuous flow of mix into the freezing cylinder and is frozen when it reaches the exit end. These continuous freezers are usually made in sizes which will freeze 60 gallons or more per hour.

Early models of ice cream counter freezers included a 3-gal. freezer, 60-gal. hardening cabinet, and the refrigerating unit—a miniature commercial ice cream plant. Compared with today's models, the earlier models did not have the same "eye appeal," but comparatively few changes have been made in the operating principles.

Today it is estimated that there are some 14,000 counter freezers in daily use, which will be found in drug, confectionery, bakery stores, restaurants, hotels, U. S. Army posts, and on many U. S. naval ships. These will be found to be in a variety of sizes to meet the requirements and capacities are from 1 to

5 gallons of finished ice cream per batch.

Before going into any explanations of the fundamental parts of any counter freezers and how ice cream is manufactured from them, it is necessary to have some understanding of just what ice cream is, to understand fully each part of the freezer and its function.

ICE CREAM AND ITS COMPONENT PARTS

Ice cream as we know it today can be briefly defined as the name applied to the "mix" (mixture) after it is flavored, expanded in volume (overrun), and frozen. The "mix" with which the ice cream itself is made contains certain constituents such as butterfat, serum solids, sugar, gelatin, and flavoring.

It is practically impossible to give any standards for the component parts of high quality ice cream. The standards given by the health authorities recognize plain ice cream as containing 14% butterfat, or fruit or nut ice cream as containing 12% butterfat. The various states have their own standards ranging from 8% butterfat to 14% butterfat.

THE 'MIX'

The "mix" is a product produced from various butterfat ingredients, which includes skimmed milk, milk powder, sweet cream, condensed milk, sweet butter, sugar, and a stabilizer which is generally gelatin. Egg powders and egg yolks are also sometimes used. The mix should not be confused with any specific percentage of butterfat content. The primary source of fat in ice cream is milk, for which no substitution should ever be allowed.

For economical handling in the manufacture of ice cream, milk is concentrated in various ways and the percentage of butterfat usually obtained in ice cream is arrived in part from the milk. Additional fat is obtained from cream, sweet butter, salted butter, and condensed whole milk. Essential to a successful retail counter freezer business is a regular supply of high quality ice cream mix, flavors, and other ingredients used in the preparation of ice cream.

To meet this need, dairies and other suppliers in practically every large city in the country manufacture mix and other materials. Manufacturers of counter freezers will give, upon request, the names of reputable mix manufacturers.

BUTTERFAT

As butterfat content forms the basis on which the quality of ice cream is based, it can be considered as the most important part of ice cream. It also determines the texture and food value of the finished product, and the actual amount of butterfat which is found in the ice cream is regulated according to the quality of the ice cream desired.

If an extremely high butterfat content is considered in the ice cream, it is not a well balanced food product, although it may be quite nourishing and quite tasty. To give best results most ice cream authorities recommend that the butterfat content should be in balance with the serum solid of the mix. An ice cream mix which is low in butterfat content would require a greater percentage of serum solid in order to establish proper ratios. Table 1 gives examples of how the percentage of serum solids in ice cream mix

Table 1

Butterfat Content	Serum Solid Content
8%	11 to 13%
10%	10 to 12%
12%	9 to 11%
14%	8 to 10%

should decrease as the butterfat content increases.

SERUM SOLID

Any ice cream mix in which cream and milk are used will contain a certain percentage of serum solids, also called solids—not fat. Source of serum solids is parted milk, skimmed milk, whole milk or condensed milk. Therefore it is quite usual for the ice cream manufacturers to increase the amount of serum solid by adding condensed milk or some kind of milk powder.

Excessive use of serum solid will sometimes result in the ice cream losing its smoothness of texture and becoming "sandy," and will also result in a soggy ice cream or a low overrun.

GELATIN

Edible gelatin as usually received by the ice cream manufacturer may be described as being a nearly colorless, odorless, and semi-transparent substance. The purpose of the gelatin used in the ice cream mix is to produce a smoother texture of product. Ice cream containing gelatin is less likely to water crystallization upon standing than that containing none. The quantity used is extremely low, averaging about 1/2 of 1%, the actual amount being dependent upon the strength of the gelatin, the temperature of the homogenization, and the composition of the mix.

SUGAR

Sugars are one of the chief ingredients of ice cream and the content ranges from 15% to as high as 24% of the finished mix. When properly used, sugar not only sweetens the finished product, but improves its palatability, texture, and food value. Excessive use of sugar causes slower freezing, and mix containing too great an amount of sugar becomes soft more quickly than products where smaller amounts have been used.

WHOLE MILK

In the manufacture of ice cream mix, whole milk is used very extensively, and because of the difficulties encountered preserving it properly, all mix having a content of whole milk should be used as quickly as possible. As skimmed milk will supply a certain amount of serum solid which is utilized in standardizing the mix itself, in some sections of the country skimmed milk is used in preference to whole milk.

BUTTER

There are times when whipped cream cannot be purchased, and there are localities where the best quality cannot be obtained, therefore sweet butter offers an economical source of fat, it being less perishable than sweet cream. The use of unsalted butter furnishes a cheaper source of butterfat than the use of cream.

MILK POWDER

Skimmed milk is a source of milk powder which is used in the manufacturing of ice cream mix. The purpose of the powder is to supply the serum solids in the finished product. Milk powder has the advantage over the fresh product in that the user is able to keep it a great deal longer.

CLASSIFICATION OF ICE CREAM

Plain Ice Cream—Plain ice cream contains the average percentage of butterfat and is usually flavored with vanilla or such flavors as coffee, mint, maple, and caramel.

Fruit Ice Cream contains an average of 1 to 2% less butterfat than plain ice cream and may have a variable amount of fresh or preserved fruits ranging from 3 to 8%, such as strawberries, raspberries, peaches, apricots, pineapples, etc.

Nut Ice Cream—Similar to fruit ice cream, nut ice cream is usually 1 or 2% lower in fat content than plain ice cream and contains a variable percentage of nuts with or without flavor ranging from 1 to 5%. The nuts commonly used are walnuts, almonds, hazelnuts.

Aufait—This is a brick ice cream consisting of layers of one or more kinds of ice cream with solid layers of frozen fruits in between.

CLASSIFICATION OF ICES AND SHERBETS

Plain Ice—An ice made from water, sugar, with or without egg, stabilizer, and natural flavoring and frozen to the consistency of ice cream.

Sherbet—This is a semi-frozen product made of similar ingredients as above, except for the addition of milk or milk products.

Frappe—This is an ice consisting of water, sugar, and natural flavoring served in a semi-frozen consistency.

In the manufacturing of ices and sherbets it is to be noted that only 30% overrun is essential because of the light body of these products.

In later articles, detailed information will be given to one of the comparative newcomers in the ice cream field, known as "soft ice cream" and there will be further discussions of the ingredients of ice cream, in order to obtain a clear understanding.



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"Captain Charlie" Shaughnessy has been in the Company service since 1903.

\$3,407,886 Is Nema Commercial Volume For May; Beverage Coolers Pace Packaged Equipment

The following report of commercial refrigerating equipment sales for May, 1940 was made to the Commercial Refrigeration Section of the National Electrical Manufacturers Association (Nema) by the following 16 companies:

Baker Ice Machine Co., Inc., Brunner Mfg. Co., Carrier Corp., Crosley Corp., Frigidaire Div. General Motors Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div. Nash-Kelvinator Corp., Merchant & Evans Co.,

Norge Div. Borg-Warner Corp., Servel, Inc., Uniflow Mfg. Co., Universal Cooler Corp., Vilter Mfg. Co., Westinghouse Electric & Mfg. Co., and York Ice Machinery Corp.

SALES FOR MAY, 1940

	Domestic		Canadian		Other Foreign		Total World	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete.....	439	\$ 29,371	4	\$ 265	31	\$ 2,004	474	\$ 31,640
2. Pressure Water Coolers—Complete.....	2,950	286,983	21	1,936	74	7,681	3,045	296,600
3. Water Coolers—Low Side Only.....	128	17,247	.....	.....	.....	.....	128	17,247
4. Ice Cream Cabinets—Complete.....	6,008	923,056	363	57,912	45	7,553	6,416	988,521
5. Ice Cream Holding Cabinets Only (Remote).....	312	47,744	4	547	2	242	318	48,533
6. Bottle Beverage Coolers—Complete.....	7,160	677,687	223	18,208	142	14,492	7,525	710,387
7. Beverage Coolers (No High Sides).....	91	8,426	.....	.....	.....	.....	91	8,426
8. Milk Coolers—Complete.....	27	3,359	.....	.....	1	193	28	3,552
9. Milk Cooling Cabinets (No High Sides).....	203	9,589	.....	.....	.....	.....	203	9,589
10. Commercial Evaporators—Not Reported Above (Including Cold Diffusers, Brine, and Other Spray Evaporators, Etc.).....	2,810	137,686	430	12,226	372	20,804	3,612	170,716
11. Condensing Units Less Than 1/2 Hp.....	4,136	179,619	117	5,202	260	12,607	4,513	197,428
12. Condensing Units—1/2 Hp.....	4,114	239,168	74	4,579	131	8,636	4,319	252,383
13. Condensing Units—3/4 Hp.....	2,143	181,690	51	4,562	170	14,704	2,364	200,956
14. Condensing Units—1 Hp.....	1,296*	142,161*	23	2,578	78	7,978	1,397	152,717
15. Condensing Units—1 1/2 Hp.....	683	94,221	18	2,498	52	7,997	753	104,716
16. Condensing Units—1 1/2 Hp.....	331	57,804	10	1,698	42	7,470	383	66,972
17. Condensing Units—2 Hp.....	218	44,912	4	891	34	6,936	256	52,739
18. Condensing Units—3 Hp.....	89	24,056	1	194	19	3,626	109	27,876
19. Condensing Units—5 Hp.....	65	24,864	2	564	7	1,771	74	27,199
20. Condensing Units—7 1/2 Hp.....	14	6,884	1	440	4	1,473	19	8,797
21. Condensing Units—10 Hp.....	7	5,183	.....	.....	.....	.....	7	5,183
22. Condensing Units—15 Hp.....	10	6,931	.....	.....	3	1,646	13	8,577
23. Condensing Units—20 Hp.....	3	2,991	.....	.....	.....	.....	3	2,991
24. Condensing Units—25 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
25. Condensing Units—30 Hp.....	2	3,209	.....	.....	.....	.....	2	3,209
26. Condensing Units—40 Hp.....	1	3,593	.....	.....	.....	.....	1	3,593
27. Condensing Units—50 Hp.....	.....	.....	.....	.....	.....	.....	.....	.....
28. Total—All Condensing Units (11 to 27).....	13,112	1,017,286	301	23,206	800	74,844	14,213	1,115,336
29a. Condensers—Sold Separately Shell & Coil or Shell & Tube.....	9	649	.....	.....	.....	.....	9	649
29b. Evaporative Type.....	11	4,849	.....	.....	2	1,841	13	6,690
30. Total—All Commercial Refrigeration.....	\$3,163,932	\$114,300	\$129,654	\$3,407,886

*Includes sales and credits.

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General Offices: Waterbury, Conn.

309,000 Six-Foot Models Are Included In Nema Refrigerator Shipments For May

The following 14 companies reported sales to the Refrigeration Division of the National Electrical Manufacturers Association (Nema) on household electric refrigerators for May, 1940:

Apex Electrical Mfg. Co., Crosley Corp., Edison General Electric Appliance Co., Inc., Frigidaire Div. General Motors Corp., Gale Products Div. Outboard Marine & Mfg. Co., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Div.

Nash-Kelvinator Corp., Leonard Div. Nash-Kelvinator Corp., Norge Div. Borg-Warner Corp., Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co.

The sales of the reporting companies include units manufactured for the following concerns: Montgomery Ward & Co., Potter Refrigeration Corp., and Sears, Roebuck & Co.

SALES FOR MAY, 1940

	Domestic	Canadian	Other Foreign	Total
Lacquer (Ext.) Cabinets Complete				
1. Less than 4 cu. ft.....	2,993	400	613	4,006
2. 4 to 4.99 cu. ft.....	14,097	2,755	1,695	18,547
3. 5 to 5.99 cu. ft.....	14,968	2,011	1,080	18,059
4. 6 to 6.99 cu. ft.....	287,889	5,352	2,278	295,519
5. 7 to 7.99 cu. ft.....	3,458†	7	20	3,485
6. 8 to 8.99 cu. ft.....	16,446	221	483	17,150
7. 9 to 12.99 cu. ft.....	1,804	.....	.....	1,804
8. 13 cu. ft. and up.....	29	.....	.....	29
9. Total Lacquer.....	341,684	10,746	6,169	358,599
Porcelain (Ext.) Cabinets Complete				
10. Less than 5 cu. ft.....	4	.....	25	29
11. 5 to 5.99 cu. ft.....	920	57	371	1,348
12. 6 to 6.99 cu. ft.....	13,410	54	138	13,602
13. 7 to 7.99 cu. ft.....	.....	.....	.....	.....
14. 8 to 8.99 cu. ft.....	2,124	2	330	2,456
15. 9 to 12.99 cu. ft.....	187	2	9	198
16. 13 cu. ft. and up.....	344	2	31	377
17. Total Porcelain.....	16,989	117	904	18,010
18. Total—Lines 9 and 17.....	358,673	10,863	7,073	376,609
19. Separate Systems, 1/4 hp. or less.....	40	.....	2,977	3,017
20. Separate Household Evaporators.....	.....	49	.....	49
21. Total—Lines 18, 19, and 20.....	358,713	10,912	10,050	379,675
22. Condensing Units, 1/4 hp. or less.....	.....	.....	.....	.....
23. Cabinets—No Systems.....	11	.....	11	22
Value Index*.....	126.0	237.0	80.1	126.0

*Based on weighted sales for 1934, 1935, and 1936. †Includes sales and credits.

Only 11,000 Users Left, Say Omaha Ice Firms

OMAHA, Neb.—Omaha ice companies have lost 41,000 customers to automatic refrigeration during the last 14 years, and now have only 11,000 homes left as ice prospects, it was revealed in a request by Fred J. Rueth, president of Omaha Ice & Cold Storage, Inc., that the Metropolitan Utilities District close its ice department as "practically the only solution for some of the private plants to continue operation."

Mr. Rueth declared that the original mission for establishing a municipal ice plant in 1914 had been fulfilled, and that he could promise ice prices would not be raised if the municipal plant quit.

MAKE BIGGER PROFITS
TYLER full line dealers and distributors are setting new records for sales and profits. Tyler's big line enables you to completely outfit modern food stores and open up hundreds of live prospects in other fields. Famous Welded Steel construction. Phenomenal values. Display cases, Reach-Ins, Walk-Ins, Vegetable Displays, and special type refrigerators to fit all needs. Every one a super value. Write for details.
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TYLER Refrigerators
WELDED STEEL
REACH-IN BOXES—40% greater capacity.

BAR-BOY --- DIRECT DRAW BEER SYSTEMS
BUILT RIGHT -- PRICED RIGHT
SIMPLE TO INSTALL
Available in 2-3-4 Keg Sizes.
Ice Water Faucet Standard On All Models.
Bottle Compartment And Ice-Maker Optional Equipment.
Full Line Of Beer Equipment, Including Walk-In Type Pre-Coolers And Dry-Storage Bottled Beverage Coolers.
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FOGEL REFRIGERATOR COMPANY Since 1899
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Fan Blades and Blower Wheels
by TORRINGTON
THE TORRINGTON MANUFACTURING CO. of TORRINGTON, CONNECTICUT

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A complete line of electric water coolers that offers every dealer an opportunity to make real money. Write for complete information.
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ELECTRIC WATER COOLERS
Puro Filter Corp. of America, 440 Lafayette St., New York.

OPEN for Business
The Crispeteria is open OPEN for compelling, attention-getting display of produce. OPEN for customers loaded down with purchases, who can't open bulky doors. OPEN for easy handling and selection. OPEN FOR BUSINESS! OPEN so that grocers are eager to install one. OPEN a new field for profits by selling the Crispeteria.
KOCH REFRIGERATORS
NORTH KANSAS CITY, MO.
Write today for details and open territories.

RANCO
The WORLD'S OUTSTANDING COMMERCIAL CONTROL —
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SKILLS



To produce identic parts, capable of interchange on the job in service, requires coordination of the highest order between the various human and mechanical elements involved.

Skilled designers, pattern-makers, tool-makers, forging experts, automatic lathe specialists, as well as adepts in inspection, all are necessary to produce the "Built Right to Stay Tight" fittings, made by Commonwealth.

The skill of humans is paralleled by the almost uncanny accuracy of the various machines used, all kept to the pitch of perfection by skilled machinists.

Skillful blending of human and mechanical skills give to Commonwealth fittings their unquestioned acceptance by the industry, a position maintained by Commonwealth during more than 30 years of service.

Seepage-proof fittings, "Built Right to Stay Tight," are made by Commonwealth in every standard form, in hundreds of semi-standard patterns, and in special fittings with any combination of pipe and tube ends.

Send for Catalog No. 38.

COMMONWEALTH BRASS CORP.

Commonwealth at Grand Trunk RR.
Detroit, Mich.

Eliminate BURNED-OUT COMPRESSOR BEARINGS with AMINCO OIL SEPARATORS

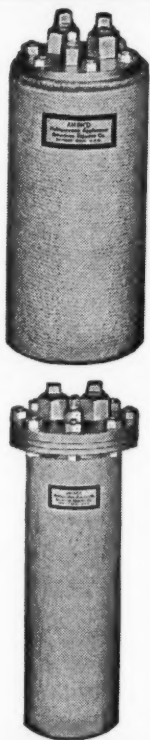
There's no need for burned-out compressor bearings. By installing an AMINCO Automatic Oil Separator, oil, which is mixed with refrigerant gases is automatically returned to the crankcase where it belongs and where it will do the most good.

An AMINCO Oil Separator will also prevent oil logged evaporators, the formation of hard carbon and wax deposits, and will increase the efficiency of the unit.

New extra heavy electrically welded steel shells withstand higher pressures without breakage or deformity. This feature is essential with "Freon" units. Insulated shells maintain gas pressures and avoid condensation. Sizes from 1/4 to 120 tons.

AMERICAN INJECTOR CO.

Pacific Coast—Van D. Clothier, 1015 E. 16th, Los Angeles
Export: Borg-Warner International Corp.,
310 S. Michigan Ave., Chicago, Ill.



You can SPEED UP your flaring!



The new Imperial Flaring Tool with slip-on yoke, provides ease and speed of operation never before attained in a flaring tool. The yoke is made so that it can be slipped on over the bar without twisting or turning. The inside edges of the yoke are slotted so that once in position a slight turn holds it in place on the bar. Yokes are made of forged steel. An additional advantage of this tool is the construction of the bottom of the yoke, which permits flares to be made where there is little space between nut and the end of tubing. Flare tubing sometimes offers this problem. Flares soft copper, brass or aluminum tubing. No. 195-F Imperial Flaring Tool, flares 1/4", 3/8", 1/2", 5/8" and 3/4" O. D. tubing. Price each—\$4.25. Also available for all other sizes of tubing.

THE IMPERIAL BRASS MFG. CO., 365 S. Racine Ave., Chicago, Ill.

IMPERIAL

VALVES • FITTINGS • TOOLS
CHARGING LINES • FLOATS
STRAINERS • DEHYDRATORS

ORDER FROM
YOUR JOBBY

Chieftain

The final answer to the question of Quality is Field Acceptance. Ask the Chieftain User.

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Cinch the sale by making the complete installation. Sherer offers a complete line of sure-fire leaders, plus whole-hearted factory cooperation. Write for catalog and franchise details.



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Defrosting Trays,
Dishes, etc., etc.

A Real "Buy"
Size 13" x 8 1/2" x 4 1/4"
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Less\$5.98
2% or\$5.96 Net

Also Other Sizes
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YES, INDEED, YOU WILL FIND AN EXCELLENT ASSORTMENT IN OUR BIG CATALOG—AT THE RIGHT PRICES . . . AND THOUSANDS OF REFRIGERATION AND AIR CONDITIONING SERVICE PARTS, ALSO.

THE HARRY ALTER CO.

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NEW YORK
BROOKLYN
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DETROIT
CLEVELAND
ST. LOUIS

Frigidaire Offers Set of Specifications As Guide To Architects & Builders

Editor's Note: In the June 26 issue of the News was published Frigidaire's idea of a set of specifications for household refrigerators that might be demanded by an architect or builder. Such specifications, the manufacturer announced, were intended to supplement any previous assistance available to architects and builders in the selection of refrigeration equipment.

A similar set of specifications was issued on electric ranges and is presented on this page as a report of a manufacturer's activity which may be of interest to the field.

Electric Range Specifications

These specifications cover electric ranges of the low oven type with three surface units. A low oven range is defined as one with the oven located below the cooking surface.

Ranges shall have the following overall dimensions:

Width—Not less than 19 1/2 inches or more than 22 inches.

Depth—Front to back (not including handles) not less than 22 inches or more than 25 inches.

Height—Floor to cooking top 36 inches. Height from floor to top of back splash not less than 40 inches or more than 44 inches.

The range shall be so constructed that the back splash may be placed solidly against a wall at the rear. Underwriters' approval must be specifically secured as to this feature. There shall be no controls, outlets, or projections on either side of the range which would prevent cabinets or other pieces of equipment from being placed directly adjoining the range.

Ranges shall be listed under Underwriters' Laboratories Re-examination Service.

All ranges shall be the latest models and shall be of the general construction that has been in successful operation for at least two years and is known to have given satisfactory service.

Ranges shall be designed to operate on 120/240 volt, 3-wire, 60 cycle, single phase supply.

No provisions need be made for time control of the oven circuits.

Body Construction: A rigid, durable range body is required. It must be able to withstand the strains of shipment, installation, and usage without permitting parts to shift out of alignment; for this reason, a body of pressed steel parts, electrically welded into a rigid body is required.

These ranges are to be provided with a toe space at base of range and are to be the "built-to-floor" type of construction.

Exterior Finish: The finish of the range shall be as follows:

To insure a durable, non-rusting finish all exterior surfaces on the front and sides of the range shall be finished in first quality white porcelain enamel. The base and toe space may be finished in black porcelain enamel.

The cooking top shall be finished in white acid-resisting porcelain enamel.

Rear panels and all interior parts, except as otherwise specified, shall be finished in (a) ground coat porcelain enamel (b) primer coat of high temperature baked enamel or (c) baked-on black japan, (d) or other finishes that will withstand exposure to a standard 20-hour salt spray test.

Oven: Each range shall be equipped with an oven which with the door closed shall have an inside width not less than 16 inches, inside height of not less than 14 inches, and inside depth not less than 18 inches.

The oven lining shall be of enameling sheet not less than .030 inch thickness, finished inside and out in ground coat porcelain enamel. The oven lining shall have no open joints and be so constructed that moisture from cooking in the oven with the vent closed will not be forced through any joints into the insulation where it will cause rusting and deterioration of the casing parts.

The oven shall be equipped with a suitable vent to permit the escape of steam, the external opening of the vent shall be so located as to prevent exhaust vapors coming into contact with adjoining equipment or walls.

Each oven shall be equipped with a unit or units which make possible satisfactory baking, broiling, and roasting operations.

Oven units shall be equipped with contacts which shall be located outside of the heated zone. The contacts shall be protected from grease or moisture from the oven depositing on the metal parts. Oven units shall be shielded so that spillage onto them will be deflected away from any electrically live parts.

The oven shall be equipped with at least two baking racks of steel wire with a nickel plate finish and a porcelain enameled steel or non-ferrous metal broiler pan with a steel broiling rack finished in nickel plate or ground coat porcelain.

Oven Performance: Heat Loss: The oven shall be tested for heat loss by allowing it to operate under maintained temperature control at 400° F. in a room of approximately 75° F. with the lower oven unit connected in the normal baking position for a period of not less than six hours. The watt hours input shall be measured beginning with the second

hour and ending with the sixth hour. The oven heat loss shall not be greater than 550 watts with the oven temperature at 375° F. above room temperature.

Preheating: With a maximum wattage the average oven air temperature shall attain a temperature of 375° F. above room temperature in not more than 13 minutes.

Oven temperature shall be measured with a thermocouple of wire, diameter not greater than .032 inch located at the center of the oven.

Automatic Oven Control: Each range shall be equipped with a thermostat of the so-called "hydraulic" type, which will provide automatic control of the oven unit or units and permit cooking operations in the oven to be accomplished by maintained temperature. The devices employed in the automatic control of the oven shall be simple in design and rugged in construction, so that they will require a minimum amount of maintenance.

The thermostat shall be provided with a graduated scale ranging from 130° to 500° F. The average temperature shall be maintained within 30° F. of the temperature setting at any point within the specified temperature scale.

The differential in temperature shall not exceed 40° F. when operating at 400° F. Nema test specifications shall govern the performance of these tests.

In the foregoing tests, the lower unit shall be connected in the normal baking position.

Oven Door: The oven door shall be the drop type, and open to a horizontal position. It shall be fully counterbalanced and constructed to close completely and firmly. It shall be of double watt construction with a front panel and a lining.

Surface Units: All units shall be of the enclosed or metal encased type. The heated surface shall be of a metal or alloy which has been proven by experience to withstand continuous operation at 1,200° F. Units with cast iron heated surfaces will not be acceptable. Each unit shall have a supporting ring or pan of stainless steel or other suitable non-ferrous material which will not warp or deteriorate under the action of food spoilage. Each cooking surface shall have two units of nominal 1,200 watt rating, maximum rating 1,300 watts at 120 volts and one unit of nominal 2,000 watt rating, maximum rating 2,200 watts at 120 volts.

Switches: Each surface heating unit shall be controlled by a switch. These switches shall not be less than six-position, five-heat, reversible, rotating type. The various positions shall be clearly and permanently marked on or immediately adjacent to each switch handle.

Unless the oven thermostat embodies an "off" and "on" switch a separate oven switch shall be provided. In the case of two element ovens, the preheat, bake, and broil positions shall be clearly and permanently marked.

The switches shall be capable of completing 30,000 operating cycles at approximately 6 cycles per minute while carrying 2,500 watts without becoming inoperative, broken, or electrically unsafe.

Range Wiring: The terminal connection shall be provided to permit the fastening of the range connecting cable. The exterior wiring from the range to the wall outlet will not be provided as a part of the range.

Appliance Receptacle: No appliance receptacle will be required.

Drip Tray: A drip tray shall be furnished to catch and hold all normal spillage which may pass through the surface units. This tray shall be of enameling steel with ground coat porcelain enamel finish. It shall be removable from the front of the range.

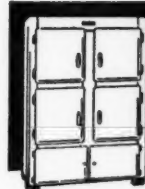
Instructions: The contractor shall furnish complete instructions with each unit explaining in detail the proper operation and maintenance, and any other standard literature or descriptive matter normally supplied referring to special meals, etc., that can be prepared on the range.

Guarantee: The contractor is to guarantee, in writing, the entire equipment furnished under this specification to be free from defects in design, workmanship, and materials and agrees to repair or replace, free of any charge, any part except porcelain enamel, which proves to be defective within one year from the date of installation.

The contractor is to certify in writing that the equipment supplied complies with the foregoing specifications in every particular. The purchaser, at its option and expense, may select two specimen ranges from those furnished by the contractor and submit them to a recognized laboratory for test as to compliance with the specifications. In case the two ranges fail to meet the specification in any particular, the contractor at his own expense shall make good the deficiency on all ranges supplied.

BUNDY TUBING

Copper-Braced Steel, Copper Coated Inside and Out. Sizes: 1/8" to 3/4" O.D.
BUNDY TUBING CO., DETROIT



COMMERCIAL REFRIGERATORS

World's most complete line of commercial cabinets—13 to 84 cu. ft. capacity.
MIDWEST MFG. COMPANY • GALESBURG, ILL.



When your customers demand **QUICK SERVICE** Use **ROTARY SEAL** Replacement Units
Rotary Seal Co., Chicago, Ill.

SPORLAN VALVES

Send for your COPY OF "FIN COIL ENGINEERING"
REMPE CO.
342 N. SACRAMENTO BLVD., CHICAGO, ILL.

Use CHICAGO SEALS for seal replacements

A complete line in all sizes
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GALE

CONDENSING UNITS
Precision built for efficient operation.
GALE PRODUCTS
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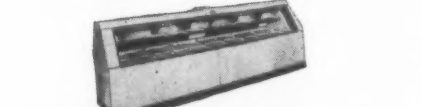
Sells Faster Because It Cools Faster!
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Ideal Beer Cooler Co.
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Hardy-MAYFLOWER

commercial compressors are a sure guarantee of satisfaction
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USE McQUAY COILS WITH THE HIGH CONDUCTIVITY "FRICTION-GRIP" BOND

McQuay Inc.
MINNEAPOLIS, MINN.



CAMPBELL REFRIGERATOR CO.
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Dealers Wanted for Midwestern and Southern States

The Most Accurate Control Valve for Small Capacity Systems

The "TK" Thermo Valve
Alco Valve Co., St. Louis, Mo.

A New Improved Dehydrator on the Market Soon Look for Our Announcement
MUELLER BRASS CO.
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PENN AUTOMATIC CONTROLS AND SWITCHES

Protect the reputation of your product Write for Catalog
PENN ELECTRIC SWITCH CO.
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RATES: Fifty words or less in 6-point light-face type only, one insertion, \$2.00, additional words, four cents each. Three consecutive insertions, \$5.00, additional words ten cents each. PAYMENT in advance is required for advertising in this column. REPLY to advertisements with Box No. should be addressed to Air Conditioning & Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

A GRADUATE of the Industrial Training Institute of Chicago desires a position in refrigeration and air conditioning service. Box No. 1243, Air Conditioning & Refrigeration News.

FRANCHISES AVAILABLE

SEND FOR PRICES and literature on the General 1940 all streamlined refrigerator display case line. Over 40 years experience manufacturing good commercial refrigerators. On a comparative price test with other makes of equal specifications, prices are lowest in the country. GENERAL REFRIGERATOR & STORE FIXTURE CO., 5th & Bainbridge Sts., Philadelphia, Pa.

EQUIPMENT WANTED

WE WILL Purchase Manufacturers' Jobbers' Dealers' surplus equipment. We are interested in purchasing an unlimited quantity of commercial condensing units from 1/2 hp. to 3 hp. inclusive, air and water-cooled for methyl, "Freon," sulphur. Also interested in valves, controls of all types, strainers, compressors, motors all hp. ac, dc and all accessories. Please send us full particulars on above. R & R REFRIGERATION JOBBERS, 508 Morris Ave., Bronx, N. Y.

EQUIPMENT FOR SALE

BRAND NEW air cooled High Sides at exceptionally low prices. These condensing units are complete, ready to be plugged in. They are made up with all new parts; General Electric or Frigidaire Compressor, General Electric or Delco Motor, heavy duty condenser, heavy base, receiver, valves, etc.; charged with Methyl or "Freon." They are available in 1/2-1/4 and 1/2 H.P. GENERAL REFRIGERATORS CORPORATION, 518 East 20th Street, New York, N. Y.

AIR CONDITIONERS, General Electric and Fairbanks Morse. All brand new in original crates, beautiful walnut cabinets, size about 42 inches long, 41 inches high, and 19 inches deep. All AC. 90 Fairbanks Morse 3/4 ton air cooled, cost about \$400. Our price \$150. 74 General Electric 1 ton water cooled, cost about \$500. Our price \$175. Also 1 ton General Electric highside \$125. G & G GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE, 2429 Wabash, Chicago.

BRAND NEW Westinghouse one ton low-sides complete with fans, coils, expansion valves, manual controls, heat exchanger, and cabinet \$32.50 each. Brand new General Electric 1/2 H.P. and 1 H.P. high-sides also available. Write for details. ASSOCIATED REFRIGERATOR PLANT, INC., 3028 W. Hunting Park Ave., Philadelphia, Pa.

REPAIR SERVICE

SPECIAL PRICES! G.E. DR-1-DR-2; domestic Westinghouse and Majestics \$24.50 to customers purchasing ten or more units a year. Regular price \$27.00. One year unconditional guarantee. Place order for any Model G.E., Westinghouse or Majestic sealed unit advising complete model and type needed. Shipment will be made from stock same day. Return old unit later. Our production lines turn out completely rebuilt sealed units mechanically comparable to manufacturer's. We offer replacement service inferior to none at prices that enable you to realize profit on resale. Send for complete Replacement Schedule 40BB. REX REFRIGERATION SERVICE, INC., 2226 South State Street, Chicago, Ill.

CONTROL REPAIR service. Your controls repaired by expert mechanics, with special precision equipment. Supervised by graduate engineers. We stress perfection and dependability before price. One year guarantee on domestic controls. Any belows operated device repaired. HALELECTRIC LABORATORY, 1793 Lakeview Road, Cleveland, Ohio.

WORLD'S LARGEST rebuilders of refrigeration units. Original, Genuine Majestic replacement units and parts for refrigerator and radio. Rebuilders of Majestic, General Electric, Grunow, Westinghouse, Coldspot, Servel, Gibson units at \$25 up with 18 months' guarantee protection bond. 500 units on hand. Send for catalog. G & G GENUINE MAJESTIC REFRIGERATOR & RADIO PARTS SERVICE, 2429 Wabash Ave., Chicago.

COMMERCIAL AND DOMESTIC controls reconditioned like new at a small cost. All work guaranteed for one year. We also repair all types of relays with same guarantee. UNITED REPAIR SERVICE, 342 West 70th St., New York, N. Y., TRafalgar 4-2557-8.

FREE HERMETIC CATALOG complete with prices on refrigerator units, rebuilding and exchange service. General Electric, Westinghouse, Majestic, Frigidaire and a complete stock of Grunow compressors and parts. Immediate shipment. For your copy specify catalog A. SERVICE PARTS COMPANY, 1101-3 North 24th Avenue, Melrose Park, Illinois.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

What's What In the Radio Field

Farnsworth Adds Outlets At Home and Abroad

FORT WAYNE, Ind.—With the second annual international sales conference over, and the factory organization back in the groove, executives of Farnsworth Television & Radio Corp. have scheduled their new line of radios and radio-phonographs for delivery in July and August.

Farnsworth's factory at Marion, Ind., with maximum production capacity of 5,000 sets a day, is humming with activity under the supervision of J. P. (Jack) Rogers, vice president and treasurer of the company.

FOREIGN DISTRIBUTORS

Pierre Boucheron, general sales manager, has announced that three new distributors signed franchises during the convention, bringing the total number of Farnsworth jobbers to 58. Mr. Boucheron said Farnsworth distribution now covers 96% of the potential buying power of the United States. The company started production last August with less than 74% coverage of this market.

In addition, Farnsworth now has 26 distributors in 18 foreign countries. Three of these attended the Chicago convention. They were E. F. de Mendia, Jr., representing Compania Nacional de Efectos Electricos, Camaguey, Cuba; J. de Campos Salles, Campos Salles & Co., Sao Paulo, Brazil; and T. C. de Grand Pre, T. C. de Grand Pre & Sons, Buenos Aires, Argentina.

INTRODUCTORY MEETINGS

Immediately following the Chicago sales convention, Farnsworth distributors throughout the country swung into a series of meetings to introduce the new Farnsworth line to retail dealers. The first showings were by Trilling & Montague, of Philadelphia, and Sampson Electric Co., of Chicago, which opened simultaneously June 10. Other opening dates were scheduled as follows:

June 13—Lappin Electric Co., Milwaukee.

June 16—Gerlinger Equipment Co., Inc., Toledo.

June 17—Haynes-Boston Co., Boston; Good Housekeeping Shops, Providence, R. I.; B. H. Spinney Co., Springfield, Mass.; Buffalo Nipple & Machine Co., Buffalo; Electric Products Corp., Pittsburgh; Charles S. Martin Distributing Co., Atlanta; Southern Bearings & Parts Co., Charlotte, N. C.; Republic Supply Corp., Detroit; and Sterling Electric Co., Lexington, Ky.

June 18—B. & O. Corp., Newark, N. J.; Warren-Norge Co., New York City; Smith & Hirschmann, Inc., Rochester, N. Y.; Benj. T. Crump Co., Richmond, Va.; and Mayflower Sales Co., St. Louis.

June 19—Nelson & Co., Inc., Baltimore, and Armacost-Norge Co., Kansas City.

June 20—B. H. Spinney Co., Syracuse and Albany, N. Y.; Gibson Co., Indianapolis; and Republic Supply Corp., Saginaw, Mich.

June 21—Miller Brothers Co., Chattanooga; South Texas Appliance Corp., San Antonio; and Jensen-Byrd Co., Spokane.

June 22—Farrar-Brown Co., Portland, Me.

June 23—Midland Electric Co., Cleveland; Nilsson Distributing Corp., Grand Rapids; Sacks Electrical Supply Co., Akron, Ohio; and Compton-Knodel Distributing Co., Cincinnati.

June 24—Pixley Electric Co., Columbus, Ohio; Republic Supply Corp., Flint, Mich.; E. Garnich & Sons Hardware Co., Ashland, Wis.; Terry-Durin Co., Cedar Rapids, Iowa; W. C. Dance, Inc., Oklahoma City; Monroe Hardware Co., New Orleans; Frank Edwards Co., Inc., San Francisco; Sunset Electric, Seattle; Union Hardware & Metal Co., Los Angeles; and W. B. Davis Electric Supply Co., Memphis.

June 25—Mory Sales Corp., New Haven, Conn.; Charleston Electrical Supply Co., Charleston, W. Va.; Washington Refrigeration Co., Washington, D. C.; Straus-Bodenheimer Co., Houston, Tex.; and B. K. Sweeney Electrical Co., Denver.

June 26—Lovejoy Co., Jacksonville, Fla.; Spencer Auto Electric, Inc., Tampa; F. C. Hayer Co., Minneapolis; and Bertram Motor Supply Co., Boise, Ida.

June 27—J. L. Perry Co., Nashville; Compton-Knodel Distributing Co., Dayton; and Republic Supply Corp., Jackson, Mich.

June 28—Terry-Durin Co., Des Moines, Iowa.

June 30—R. C. K. Distributing Co., Louisville.

July 8—Texas Norge Sales Co., Dallas.

Period Design, Higher Prices Are S-W Theme

CHICAGO—Emphasis on authentic period design in cabinets and concentration on sales of higher-priced models will keynote Stewart-Warner Corp.'s fall radio campaign, it was announced at that company's recent annual distributors' convention here.

The period cabinets are being offered in response to a demand for radios and radio-phonograph combinations which will harmonize with the basic decorative theme of the rooms in which they are to be placed, declared A. B. Dicus, vice president of Hays MacFarland & Co., Stewart-Warner advertising agency.

In elaborating on the company's new merchandising policy of aiming chiefly at the large number of people in the middle and upper income brackets who take pride in their homes, Mr. Dicus pointed out that the "Concert Grand" combination set, on which most of the S-W advertising appropriation will be spent, ranges in price from \$150 to \$225.

The fall advertising campaign will break Sept. 15 and will run in Saturday Evening Post, Time, Life, and Better Homes & Gardens. This campaign, Mr. Dicus reported, will maintain Stewart-Warner as the second largest radio advertiser.

Photo-Electric Model Tops New Philco Line

CHICAGO—A photo-electric phonograph that reproduces sound on a beam of light, heralded as the most revolutionary advance in phonograph design since Edison invented the talking machine 63 years ago, was announced as one of the most spectacular features of the 1941 Philco radio line at a four-day convention in the Edgewater Beach hotel here.

Sixty new radio and radio-phonograph models were unveiled before 800 distributors, dealers, and guests from every corner of the United States at the official line premiere.

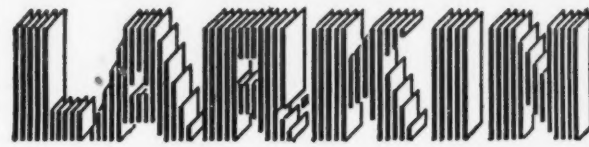
The photo-electric phonograph, the tilt-front phonograph cabinet, Philco's new home recording equipment, radios with the new overseas reception band, new Double "X" converter tube and scores of other innovations, the products of Philco's engineering laboratories, were presented to the distributors by Philco officials including James T. Buckley, president; Larry E. Gubb, executive vice president; William Grimditch, vice president in charge of engineering; David Grimes, chief engineer; Thomas A. Kennally, general sales manager; and Sayre M. Ramsdell, vice president.

In the photo-electric phonograph, a tiny light in the arm head oscillates 1,800,000 times a second and casts its beam on an even tinier mirror which swings on an axis attached above the phonograph jewel that is used in place of a needle. As the jewel vibrates in the record groove, it swings the mirror back and forth, flashing the reflected light beam on and off a small photo-electric cell also located in the phonograph arm. This cell transforms these light flashes into sound.

The secret behind this new achievement, aside from the application of a photo-electric cell to sound reproduction, is the floating jewel which literally glides in the grooves of the record.

Tilt-front device for phonograph models eliminates the opening and closing of lids when changing records.

Unique among the models of the 1941 Philco line is the strap-around portable radio which weighs but 5 pounds and is less than 5 inches high, 10 inches wide, and 4 inches deep. The aerial, 50 inches long, is a special braided, low impedance antenna concealed within the shoulder strap.



Refrigeration Products

sell new customers—hold old customers—increase your profits and prestige. Patented CROSS-FIN COILS Bare Tube Coils Humi-Temp Forced Convection Units Instantaneous Water Coolers Steel and Copper Vacuum Plate Coils Disseminator Fans Heat Exchangers

See your jobber or write today for new catalog

LARKIN COILS, INC., 519 Fair Street, S. E., Atlanta, Ga.

Originators of The Cross Fin Coil

HENRY

Balanced-Action
DIAPHRAGM PACKLESS VALVES
No Tube Bending
Because of the exclusive
PORTS-IN-LINE DESIGN

HENRY VALVE CO.
1001-19 N. SPAULDING AVE.
CHICAGO, ILL.

RECOMMENDED AND SOLD
BY LEADING JOBBERS

A SINGLE CONTROL *Universal in Application*

THE NEW POLARTRON

FOR PRESSURE CONTROL UP TO 1 H.P.A.C.

Separate "On and Off" Knobs • Universal Range • Capillary Pressure Connections • Flow Meters in Stock • Minimum Free Service • "Cooling Control" on Cut Out or Cut In • No Short Cycling • Polartron Equipped Compressors can be Converted to Produce Frost Free Constant Cold

MINNEAPOLIS-HONEYWELL REFRIGERATION CONTROL

Note These Advantages

SPECIAL OFFER \$18.50

SERVEL Model J

4 cylinder compressor! New, in original factory crates, ideal replacement unit! Complete with 1/2" SAE intake and 1/2" discharge valves and flywheel. Bore 1 1/2", Stroke 1 1/2".

Price in lots	1 to 5	\$20.50
Price in lots	5 to 10	19.50
Price in lots	10 to 25	18.50

For 1/2 and 3/4 H. P. Commercial Units.
Ideal Replacement Compressor.

NATIONAL ELECTRIC TOOL CO.
1915 S. State (Ref. Division), Chicago, Ill.

SERVEL MODEL J
4 cylinder 1 1/2" x 1 1/2"

Do You Service Any of These 13 Household Refrigerators?

Absopure, all models.
Apex (and Wayne), 1932-1938 models.
Atwater Kent, all models.
Coldspot (Sears, Roebuck-Sunbeam), all package type unit models.
Copeland, all models through 1937.
Dayton (and Niagara), all models.
Fairbanks-Morse, 1934-1937 models.
Graybar Ilg-Kold, all models.
Iceberg, all models.
Liberty, all models.
Rice, all models.
Servel Conventional, all electric models.
Servel Hermetic, all electric models.



Revised—Master Service Manual No. 4—New Edition

How to service and repair these different makes of household electric refrigerators told step by step in a revised, up-to-date edition of Master Service Manual No. 4 on Household Refrigeration. Manual No. 4 discusses construction and service characteristics and specifies just how each make differs in every way from the fundamental types of household systems for which complete service information is given in Master Service Manual No. 2. Manual No. 4 was written by K. M. Newcum, who has had many years of actual installation and service experience. He also is the author of three other Master Service Manuals on Household Refrigeration. Each manual is 6 x 8 1/2 inches in size and sells for \$1.00 in U. S. A.

Business News Publishing Co.
5229 Cass Ave., Detroit, Mich.

Date.....

Gentlemen: Please send me the Master Service Manuals checked below:

☐ No. 1—Theory and principles of refrigeration, refrigerants, condensing units, evaporators, controls, and motors. 144 pages, 88 illustrations.

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892 Refrigerators Top Chattanooga May Sales

CHATTANOOGA, Tenn.—Electric refrigerators again took the lead as Chattanooga appliance dealers broke local records in appliance sales for the third time in as many months with a total of \$278,192 being sold during the month of May.

May sales included 892 household refrigerators, bringing the total number of refrigerators sold in April and May to 1,710. As compared with an average unit price of \$116.75 in April, the average price for refrigerators sold during May was \$134, the report to the Chattanooga Electric Power Board discloses.

Three air conditioning units were sold during May at an average price of \$295.83.

The \$278,192 appliance sales for May bring the total sales by Chattanooga electrical appliance dealers for the first five months of 1940 to \$992,254.

In addition to refrigerators, 317 electric ranges were sold during the month at an average price of \$121.36; 146 water heaters at an average price of \$74; 288 clothes washers at \$72.40; 12 ironers at \$95.78; 69 vacuum cleaners at \$68.55; and 557 radios at an average price of \$33.05.

1,272 Is Dallas May Mark

DALLAS, Tex.—Sales of electric refrigerators by dealers here reached 1,272 units during May, an increase of 45% over the same month last year. Total sales for the first five months of the year amounted to 5,423 units, an increase of 30.7% over the same period of 1939.

Appliance sales totals for May and for the first five months of 1940 were:

	May	5 Mos.
Refrigerators	1,272	5,423
Ranges	2	13
Washers	414	1,412
Ironers	18	65
Cookers and Roasters	165	324
Vacuum Cleaners	524	2,463
Radio	1,757	8,769
Attic Ventilators	165	373
Air Conditioning—Self-Contained Units	2	2
Air Conditioning—Central Systems	2	3

Refrigerator Exports In Comeback Trend

WASHINGTON, D. C.—Foreign sales of household electric refrigerators, down sharply in April, recovered during May, advancing to 10,694 units valued at \$815,458, as compared with 9,601 units valued at \$751,532 in the preceding month, the electrical division of the U. S. Department of Commerce reports.

Commercial refrigerators of up to 1-ton capacity also registered gains during the month, exports totaling 1,184 units valued at \$150,336 in May, against 1,062 units valued at \$128,345 in April.

Exports of electric refrigerator parts reached their highest monthly volume this year during May, totaling \$531,228, as compared with \$399,100 in April.

Shipments of radio receiving sets, which had decreased in April to the low level of \$665,679, recovered in May to total \$779,732. All other radio classifications, however, showed decreases compared with the preceding month.

Two other categories which showed adverse tendencies were electric household washers and parts and electric razors.

125,000-Unit Year Seen For Stoker Industry

HOT SPRINGS, Va.—A continuation of present sales trends would boost the stoker industry's 1940 production approximately 20% above any previous year's total, according to Stoker Manufacturers' Association data quoted by E. C. Sammons, president, at the group's annual convention here.

Making clear that unforeseen events can quickly void any estimates, Mr. Sammons said that present operating schedules would produce about 125,000 stokers by the end of 1940. This compares with a 1939 total of 104,289 units.

Manufacturers May Sales Set New High

(Concluded from Page 1, Column 5)

1937, and best previous May was also in 1937, when shipments amounted to 333,869 units.

Nema world shipments also were over the million-and-a-half mark for the first five months of the year, totaling 1,505,911, to pass the best previous five-month mark of 1,443,920 units, set during 1937.

Importance of the part that "specials" and the big play on 6-foot models of all prices have had on 1940 sales is indicated by the fact that 1,147,498 of Nema companies' shipments through May were for units in this size class. Of this number, 1,107,599 units were of the lacquer-exterior type, and 39,899 of the all-porcelain variety.

Six-foot units also were 'way out in front in the May tabulation of Nema shipments, 309,000 of the month's 379,000 units being in this classification, and 295,519 of them being of the lacquer-exterior type.

Commercial refrigeration equipment shipments by Nema members had a dollar volume of \$3,407,886 for May, to bring to \$11,668,593 the total for the first five months of the year.

Shipments of commercial condensing units totaled 14,213 for the month, to make the five-month total 50,678 units valued at \$4,025,166. Ice cream cabinets and bottle beverage coolers continued to pace shipments of packaged commercial equipment, with marks of 6,416 and 7,525 units, respectively, while pressure water coolers continued their comeback with shipments of 3,045.

For the period through May, ice cream cabinets, with shipments of 21,076 units, led packaged equipment in dollar volume, with \$3,329,906, while bottle beverage coolers were next, with a volume of \$2,476,408 representing 26,905 units.

Florida Dealer Employs New Sales Technique

(Concluded from Page 1, Column 3)

also all the varied applications thereof. As a result they are able to analyze problems and offer advice in a way which impresses the prospect and often leads to a sale. They are continually urged to keep uppermost in their minds proper satisfaction of the prospect's needs rather than dollar value of the unit under consideration.

Six States Top 20,000 Shipments In May

States and Territories	Quantity Household Low Sides May Cumulative
Alabama	4,380 16,712
Arizona	1,113 5,514
Arkansas	2,677* 12,430
California	23,090 105,632
Colorado	2,783 10,418
Connecticut	7,016 22,714
Delaware	1,131 3,869
District of Columbia	2,496 9,259
Florida	4,460 16,091
Georgia	5,553 20,893
Idaho	964 5,814
Illinois	31,911 117,449
Indiana	9,760 39,511
Iowa	6,897 27,526
Kansas	3,286 15,097
Kentucky	5,875 21,303
Louisiana	3,226* 17,947
Maine	1,702 6,337
Maryland	4,263 16,151
Massachusetts	12,827 48,541
Michigan	20,485 73,032
Minnesota	9,553 44,336
Mississippi	2,472 10,205
Missouri	9,972 42,605
Montana	833 4,249
Nebraska	2,590* 12,009
Nevada	379 1,470
New Hampshire	1,181 3,945
New Jersey	16,410 56,692
New Mexico	568 2,815
New York	39,267 143,391
North Carolina	6,954 28,548
North Dakota	535 2,875
Ohio	22,485 87,869
Oklahoma	3,728* 16,325
Oregon	3,312 15,028
Pennsylvania	33,020 124,453
Rhode Island	1,459 6,422
South Carolina	3,267 13,517
South Dakota	756 3,488
Tennessee	5,841 26,887
Texas	13,546 64,583
Utah	1,448 6,810
Vermont	708 2,897
Virginia	6,025 21,909
Washington	5,031 25,900
West Virginia	3,929 15,543
Wisconsin	7,134 33,115
Wyoming	415 1,479
Total United States	358,713 1,431,606
Canada	10,912 33,148
Other Foreign (Incl. U. S. Possessions)	10,050 41,158
Total for World	379,675 1,505,911

*Includes sales and credits.

Willis Carrier Decries Trend Towards 'Specialization' In Engineering Education

MILWAUKEE—Criticizing "weaknesses" in the present system of technical education in America, Dr. Willis H. Carrier, chairman of the board, Carrier Corp., told members of the American Society of Mechanical Engineers at its recent semi-annual meeting that the system tends to stifle logical thinking and creative imagination.

The trend toward specialization in undergraduate courses and lack of proper standards of selection of students to be admitted to engineering courses were among five points of criticism listed by Dr. Carrier in addressing the society.

He also hit examinations and student grading, "which are not the true test of student ability desired by the employer"; failure to develop in the student the habit of thorough understanding of subject matter and processes, and insufficient emphasis placed on development of student personality.

"There is one underlying error common in most of our institutions," Dr. Carrier said. "This is the failure to appreciate that the chief objective of a technical education should be to train the student in logical thinking and develop his creative imagination; that it should be aimed primarily toward the acquisition of power rather than toward the amassing of factual knowledge."

A recent survey by Dean Hollister of Cornell university among leading aeronautical industrialists to discuss

desirability of introducing a course in aeronautics at Cornell, was cited by Dr. Carrier to bear out his contention that technical employers even in highly specialized fields, are opposed to undergraduate specialization. The airplane manufacturers were definitely opposed to the plan for a four-year course in aeronautics, preferring a broad engineering education, based on a thorough training in fundamentals.

"Personally, I can vouch for the same attitude in the case of myself and associates in the specialized field of heating, ventilating, and air conditioning," Dr. Carrier said. "We prefer not to have specialized instruction in these subjects. We do want a thorough and broad grounding in fluid mechanics, thermodynamics, and heat transfer."

"In mechanical engineering, we would expect students to have a natural interest in mechanics and mechanical processes. But more than this is required. They must have natural analytical ability. This is the real criterion of whether they should go to a trade school or take an engineering course in a university. I believe many natural artisans are spoiled by trying to make engineers of them. The essential test, therefore, for entrance to an engineering school should be the candidate's analytical ability and reasoning powers."

A "selection system," under which only the ablest students from any

number of applicants would be accepted, was advocated by Dr. Carrier as the only method of obtaining a desirable educational standard in engineering colleges.

"This may seem severe, but it must be remembered that even now there are many more engineering graduates in this country than can be absorbed profitably by industry. Industry has no use for 'duds' and the preliminary sorting out can be done most soundly and economically at the engineering college."

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